

FORESTRY ABSTRACTS



FIVE-YEAR INDEX
PART I:
AUTHORS AND SPECIES

Price 10/-

Digitized by the Internet Archive
in 2025

FORESTRY ABSTRACTS

FIVE-YEAR INDEX

TO

VOLUMES 1—5, 1939-44

	PAGE
1. FOREWORD - - - - -	3
2. LIST OF LEADING ARTICLES - - - - -	4
3. AUTHORS - - - - -	5
4. SPECIES - - - - -	42

LIST OF LEADING ARTICLES, *FORESTRY ABSTRACTS*, VOLS. 1—5

Vol. & No.	Title	Author
1 (1)	The changing shape of forestry	Oliphant, J. N.
" "	The influence of shelterbelts on the eco-climate of areas adjacent to them	Kissin, I.
" (2)	The relation of Tsetse-fly control to forestry	Nicholls, L.
" "	The Swiss leaf-cast disease of Douglas Fir	Beak, P. G.
" (3)	Recent progress in determining the viability of forest tree seeds	Kissin, I.
" (4)	Forest management and the physical properties of forest soils..	Kissin, I.
2 (1)	The importance of the plant cell wall to the forester and the wood anatomist	Clarke, S. H.
" "	Ecological requirements and cultivation of <i>Cinchona</i> , with particular reference to <i>C. succirubra</i>	Beak, P. G.
" (2)	Recent work on the pruning of forest trees with particular reference to <i>Pinus</i> spp.	Sisam, J. W. B., Kissin, I., and Beak, P. G.
" (3)	A review of recent work on the prevention of <i>Lyctus</i> attack by chemical methods	Cann, F. R.
" (4)	The control of seed origin in forestry: methods adopted in some European countries and the U.S.A.	Kissin, I., and Beak, P. G.
3 (1)	Factors affecting the vegetative propagation of forest trees ..	Sisam, J. W. B., Kissin, I., and Beak, P. G.
" (2)	Note on forests and forestry in the U.S.S.R.	Tkachenko, M.
" (3)	The control of forest seed origin in the British Empire ..	Oliphant, J. N.
" (4)	Balsa (<i>Ochroma</i> spp.)	Beak, P. G.
4 (1)	State control of private forests in Poland	Zukowski, A. A., and Coton, D.
" (2)	Wood-waste Utilization I. The chemical utilization of wood waste	Campbell, W. G.
	II. The utilization of sawdust and shavings	Harris, P.
" "	The macromolecular theory of the structure and properties of cellulose fibres	Bryant, S. A.
" (3)	Forests and forestry in Norway	Frost, F.
" (4)	The land-use movement in West Africa	Oliphant, J. N.
5 (1)	Some 1942 Press comments on rubber production in Latin America. The mobilization of resources. Commercial possibilities in Brazil's forest wealth	Slifko, C. W.
" (2)	The killing of "weed" trees	Sisam, J. W. B.
" "	Theoretical studies of logging operations	
" (3)	The census of Norwegian woodlands	Frost, F.
" (4)	Timber decay	Cartwright, K. St. G., and Findlay, W. P. K.

AUTHORS INDEX

VOLS. 1-5

- AALTONEN, V. T. 1 33, 2 281, 5 159, 162, 253
Aamodt, E. E. 3 215
— *see* Stoeckeler, J. H.
Aamot, O. C. 3 151, 4 48
Abbe, L. B., and Crafts, A. S. 1 144
Abel, E. 2 110
Abel, G. W., and Recknagel, A. B. 4 228
Abell, C. A. 3 336
— *see* Buck, C. C.
— *see* Hanson, P. D.
— *see* Show, S. B.
Abell, J. 5 231
Abeyesundere, L. A. J., and Rosayro, R. A. de 1 84
Abraham, A., *see* Kumar, L. S. S.
Abraham, J. M. O. 5 149
Ab-Yberg, W. 2 55
Acatur, A. 1 34, 5 284
Ackers, C. P. 3 178
Acosta Solis, M. 1 169, 4 83, 169
Acree, R. J. 3 35
Acuña, R. A. 1 35
Adams, A. J. S. 3 29
— *see* Boomsma, C. D.
Adams, L. E. 4 60
Adams, L. L. 3 324
Adams, R. H. 3 117
Adams, W. R., and Chapman, G. L. 4 104, 218
— and Schneller, M. R. 2 139
Adamson, A. M. 4 97, 5 161
— *see* Brooks, R. L.
Adamson, M. A., *see* Haddow, W. R.
Adkins, H., *see* Harris, E. E.
Adman, A. G., and Diller, O. D. 249
Adriaens, L. 5 271
Adrian, E. 4 46
Aeberli, H., *see* Frey-Wyssling, A.
Afanasyev, M. 1 81, 4 263, 5 14
— and Cress, M. (4) 216, 5 91
— and Spaeth, J. N. 1 161
Agdeppa, F. T. 3 321
Agostini, A. 4 103
Aguerre, R. O. 5 10
Aguilar, L. [A.] 1 102, 173, 271, 3 230, 4 35
— *see* Reyes, L. J.
Ahlm, C. E. 3 311
Ahmad, M. B. 5 233
Ahmad, M. S. 2 112, 279
Ahmad, Y. S. 1 305
Ahmed, M. M. 1 197
Aholu, V. K. 1 39
Ahrens, T. G. 4 218
Ahrens, W. E. 2 122
Aichinger, E. 4 23
Aikman, J. M. 3 102
— and Boyd, I. L. 5 89
— *see* Barger, G. L.
— *see* Warner, R. M.
Ainslie, J. R. 1 271, 2 44, 140, 3 65, 4 66
Ainsworth, G. C., and Bisby, G. R. 5 171
Airy-Shaw, H. K. 1 150, 151, 246, 249, 2 27, 290, 5 245
Akai, S., *see* Hemmi, T.
Åkerhielm, L. 5 175
Akmadullin, I. G. 3 326
Aksent'ev, B. N. 3 108
Al'benski, A. V. 2 191, 3 30, 202
Albert, A. R., *see* Wilde, S. A.
Albert, R. 1 18, 4 14, 87
Albertson, F. W. 3 70
Albrecht, F. 3 90, 100
Albrecht, K. 5 282
Alden, P. E. 2 205
Alderfer, R. B., and Bramble, W. C. 5 147
— and Merkle, F. G. 4 150
Aldous, W. M. 4 123
Aldrich, K. F., *see* Waterman, A. M.
Aleck, B., *see* Goland, M.
Alejo, L. G., Baens, L., and Lava, V. G. 121
Aleksiev, C. V., and Molchanov, A. A. 4 163
Alencar, E. 4 15
Alexander, C. P., *et al.* 5 203
Alexander, E. J. 3 294
Alexander, J. B. 1 96, 2 54
Alfonso, J. L. 3 293
— *see* Giacobbi, O. L.
Allard, H. A. 2 197, 201, 4 186, 217, 5 241, 248
— and Leonard, E. C. 5 101
Allcut, E. A. 4 181
Allen, C. K. 3 36; 4 97, 223
Allen, G. S. 1 26, 298, 4 155, 164, 221, 5 29, 237
Allen, R. C. 4 103
Allen, S. W. 4 10
Allison, J. H. 5 144
— and Cunningham, R. N. 2 255
Allison, J. L., *see* Christensen, C. M.
Allison, P. A. 3 182, 304
Allred, C. E., and Fitzgerald, F. M. 2 279
Allsop, F. 2 112, 4 161, 163
— *see* Atkinson, D. J. 2
Allsopp, A., and Misra, P. 2 221, 4 233
— *see* Preston, R. D. 2
Allward, G. A. 5 121
Almeida, D. G. de 4 195
— *see* Araujo e Silva, A. G. d'
Almeida, J. F. R. d', and Desai, J. L. 5 238
Almond, J. N., Holmes, B. M., and Plante, E. C. 3 64
Alphin, T. H. 2 200
Altamirano, G. M. 2 206
Altmann, T. 2 328
Alton, T. D. d' 3 281
Altpeter, L. S. 3 215
Ålvik, G. 2 189
Alvino, G. 1 248
Amadon, C. H. 2 232
Ambros, W. 1 297, 2 161
Amman, P. 2 66
Ammon, W. 1 30
Amos, E. G. 3 243
Amshoff, G. J. H. 3 37
Ananda Rao, S. 5 285
Anderson, A. G. 3 288
Anderson, B. E., Gortner, R. A., and Schmitz, H. 4 170
Anderson, D. A., *see* Chandler, R. F.
— *see* Croft, A. R.
Anderson, E., Beilmann, A. P., and Clark, R. B. 5 28
— and Hubricht, L. 1 139
— Kaster, R. B., and Seeley, M. G. 4 233
— Kesselman, J., and Bennett, E. C. 3 311
— Seeley, M., Stewart, W. T., Redd, J. C., and Westerbeke, D. 2 302
Anderson, E. W., and Spaulding, L. H. 2 154
Anderson, F. H., and Kruse, G. W. 2 324
Anderson, I. V. 2 55, 83
Anderson, M. L. 2 31
Anderson, R. B. 5 188
Anderson, R. E., Rasmussen, B. L., and Church, V. V. 3 244
— *see* Cliff, E. P.
Anderson, R. O. 1 311
Anderson, S., and Ihlen, N. N. 5 185
Anderson, W. H. 4 22
Andersson, E. 5 261
Andison, H., *see* Downes, W.
Andreev, N. A., *see* Buktshy' ov A. D.
Andrews, G. S. 2 251
Andrew, H. J., and Bromley, W. S. 4 139
— and Cowlin, R. W. 3 100
Andrews, L. K. 3 285; 4 179
— Gottschalk, F. W., and Johnson, J. P. 3 323
Andrews, S. R., and Gill, L. S. 1 244, 3 340, 4 56, 5 198
— *see* Gill, L. S.
Angelo, E., and Potter, G. F. 2 293
— *see* Potter, G. F.
Angström, A. 5 198
Ankudinov, A. M. 1 238
Antevs, E. 1 15
Ant-Wuorinen, O. 4 119
Anvry, S. A. A. 2 158
Appaji Rao, P. 5 52
Appel, E., *see* Jentsch, F.
Appleton, W. 2 68
Araujo e Silva, A. G. d', and Almeida, D. G. de 4 193
Arena, A., and Guinazú, J. R. 4 88
Arend, A. G. 4 181
Arend, J. L. 3 198; 4 153
— and Knight, D. M. 2 188
Arentsen, S. T., *see* Tartakowsky, S. G.
Arias, A. C. 5 168
Aries, R. S. 5 56, 293
— and Knudson, J. I. 5 46

AUTHORS INDEX

- Aries, R. S., and Othmer, D. F. **5** 43
 Ark, P. A. **1** 240
 Armbruster, H. **3** 123
 Armstrong, F. H. **3** 220
 — see Knight, R. A. G.
 — see Rendle, B. J.
 Armstrong, J. M., see Ripley, P. O.
 Armstrong, V. L. see Hutchins, C. M.
 Arnaud, G. **1** 242
 Arnbak, L., and Damgaard, J. **5** 128
 Arnborg, T. **4** 220, **5** 103, 176, 213
 Arnold, R. K., see Fowells, H. A.
 Arnold, W. P. **5** 267
 Arnot, D. B. **3** 235
 Arnst, A. **4** 215, **5** 269
 Aro, P., Brander, J., and Willman, H. J. **3** 314
 Arrhenius, O. **4** 109
 Arrillaga, N. G. **5** 52
 Arruda, S. C. **5** 281
 Artsikhovskaya, N. V. **5** 114
 Artsybashev, D. D. **1** 254
 Arwidsson, T. **4** 95
 Asai, S. **3** 155
 Asch, H. P. D. van, and Wickett, H. C. **1** 55
 Ashby, M. **2** 66
 Ashplant, H. **2** 120
 Askew, H. O. **1** 145
 Atcherley, J. R. **4** 181
 Atchison, J. E. **5** 188
 Atkins, W. R. G. **5** 35
 Atkinson, A. **5** 213
 Atkinson, C. C. see White, F. O.
 Atkinson, D. J., and Allsopp, F. **2** 80
 Atta, G. R. van, see Offord, H. R.
 Attridge, J. M., and Liming, F. G. **2** 209
 Atwell, E. A., see Fritz, C. W.
 Atwood, A. C., see Blake, S. F.
 Atwood, C. E., and Peck, O. **5** 246
 Aubert, F. **3** 328
 Aubréville, A. **1** 125, 177, 290
 Auer, C. W. **3** 181
 Auger, H. **2** 234
 Augustine, D. W. **4** 94
 Augustine, M. T. **4** 153
 Austin, L., see Day, B. B.
 Auten, J. T. **1** 75, **2** 12, **3** 196, 299, 356, **4** 150
 — see Sims, I. H.
 Avelius, N. **4** 115
 Averkiev, I. S. **1** 238
 Avery, B. F. **3** 88
 Avery, G. S., Creighton, H. B., and Hock, C. W. **3** 86
 Awalt, F. H., and Frost, B. M. **3** 280
 Axelrod, D. I. **3** 97, **4** 11, 82
 Axmacher, M. **3** 236
 Ayers, T. T., see Hahn, G. G.
 Azam, M. A. **5** 120
 Azzaroli, F., see Goidanich, G.
 BAADER, G. **1** 30, 158, **4** 196
 Baak, W. **1** 38
 Babich, P. D., see Sambur, G. N.
 Bacon, E. M. **1** 74
 Badcock, E. C. **1** 247, **4** 36
 Badoux, E. **1** 267, **4** 136
 Badoux, H. **2** 80, **3** 127
 Baechler, R. H. **1** 286, **3** 322
 — and Servais, P. **4** 177
 — see Hudson, M. S.
 — see Hunt, G. M.
 Baens, L., see Alejo, L. G.
 Bagchee, K. D. **4** 56
 Baha H. A. **1** 249
 Bahrfeldt, K., and Japing, H. W. **2** 308
 Bailey, A. **5** 183
 Bailey, A. J. **2** 51, 222, 303
 — see McMillen, J. M.
 Bailey, H. E. **3** 75, 163
 — and Bailey, V. L. **3** 355
 Bailey, H. R. **3** 178
 Bailey, I. W. **5** 97
 — and Berkley, E. E. **4** 107
 — and Howard, R. A. **3** 30, 134, **4** 31, 32
 — and Nast, C. G. **5** 167, 239
 — and Smith, A. C. **4** 21, 97, **5** 104
 — see Barghoorn, E. S.
 — see Wershing, H. F.
 Bailey, V. L., see Bailey, H. E.
 Bain, J. A., see Schuette, H. A.
 Bainbridge, J. R. **5** 191
 Baird, A. B. **3** 82, 166
 Baird, P. K., see Hallauer, F. J.
 Baker, E., see Corman, C.
 Baker, F. S. **3** 24, **4** 100
 Baker, L. F., see Bomberger, E. H.
 Baker, M. W., see Mellecker, J. B.
 Baker, R. E. D., see Brooks, R. L.
 Baker, W. C. **4** 132
 — see Whitten, R. R.
 Baker, W. L. **3** 348
 — see Burgess, A. F.
 Baker, W. M. **1** 81
 Bakhsh, A., see Pring, N. G.
 Bal, S. N. **5** 52
 — and Prasad, S. **5** 271
 Bălănică, T. P., see Chiriță, C. D.
 Balch, R. E. **1** 239, 296, **2** 29, **4** 128, 129, 192, **5** 64
 — and Hawboldt, L. S. **5** 62
 — and Prebble, J. S. **2** 248
 — Reeks, W. A., and Smith, S. G. **4** 59
 Baldi, E. **5** 268
 Baldwin, H. I. **1** 87, 185, 240, **2** 114, **3** 57, 86, 111, 121, 141, 171, **4** 98, 129, 163, **5** 40
 — and Flemion, F. **3** 126
 — and Hopkins, G. M. **3** 46
 — and Weld, E. A. **4** 118
 Baldwin, J. T., and Culp, R. **4** 16
 Baldwin, P. H., and Fagerlund, G. O. **5** 62
 Bale, A. P. **1** 178, **3** 68
 Balfour, E. B. **5** 233
 Balfour, F. R. S. **5** 58, 172
 Ball, C. R. **4** 222, **5** 23
 Ball, R. H. **5** 43
 Banasevich, N. N., and Zakharov, N. G. **4** 29
 Banerjee, Rai Sahib A. L. **4** 248
 Banfield, F. S. **5** 213
 Banfield, W. M. **3** 78, 250
 Bannan, M. W. **2** 130, **3** 133, 218, **4** 31, 107, 230, **5** 17, 181
 Bannerjee, K. K. **4** 164
 Bansal, R. K. see Sampath, S.
 Banzhaf, G. **1** 304
 Baptist, E. D. C. **1** 260
 Barabanov, P. N. **2** 320
 Baraney, A. V. **2** 120
 Barber, H. **2** 151
 Barbey, A. **1** 32, 150, **2** 161, **3** 211, **4** 98, 118, 128
 Barbour, W. J., see Wolf, F. A.
 Barbour, W. R. **4** 157, **5** 158, 173
 Barclay, J. B. **3** 147
 Barclay, J. M. **2** 202
 Barger, G. L., and Aikman, J. M. **4** 226
 Barghoorn, E. S. **2** 46, **3** 48, 133, 219, **5** 38
 — and Bailey, I. W. **3** 96
 Barkas, W. W. **1** 41, **3** 51, **4** 33, **5** 36
 — and Hearmon, R. F. S. **4** 34
 — Hearmon, R. F. S., and Pratt, G. H. **5** 182
 Barkley, F. A. **3** 36, **4** 158
 — and Reed, M. J. **3** 36
 Barnard, M. M., and Langlands, I. **2** 48
 Barnard, R. C. **2** 235
 Barnes, A. H. **2** 304, 305
 Barnes, F. F., see Brown, C. B.
 Barnes, G. H. **3** 88
 Barnes, H. F. **1** 190
 Barnes, J. S. **5** 41
 Barnett, E. C. **5** 22
 Barojas, S. **5** 29
 Barr, G., Thorogood, A. L., and Rest, E. D. van **2** 311
 Barracrough, K. E. **1** 199
 Barrault, H. **1** 150
 Barrett, H. B. **1** 254
 Barrett, J. **1** 166
 Barrett, J. R. **4** 240
 Barrett, L. I. **1** 298, **2** 295, **3** 211, 307, **5** 242
 — and Buell, J. H. **3** 259
 — and Downs, A. A. **5** 180
 — and Renshaw, J. F. **1** 281, **3** 173
 — Jemison, G. M., and Ketch, J. J. **3** 74
 Barroso, L. J. **4** 223
 Barrows, W. B., see Mattoon, W. R.
 Barsakoff, B. **3** 53
 Barsalou, M. J., see Rioux, L. J.
 Barss, H. P., see Miller, P. W.
 Barth, A. **5** 274
 Barton, L. H. C. **5** 193
 Barton, L. V. **1** 87, **2** 131, **3** 213
 Bartoo, R. A., see Stevenson, D. D.
 Bartsch, J., and Bartsch, M. **3** 34
 Bartsch, M., see Bartsch, J.
 Basargin, I. S. **2** 26
 Baseler, W., and Dietrich, J. **3** 228
 Basheer, M., see Cherian, M. C.
 Basore, C. A., and Moore, O. C. **5** 127
 Basov, G. F. **3** 217
 Bassi, V. **1** 90
 Bateman, E., Hohf, J. P., and Stamm, A. J. **1** 274
 Bates, C. G. **1** 19, **3** 217
 — see Stoeckeler, J. H.
 Bateson, R. G. **1** 181, 285
 — and Hodge, R. E. **1** 47

AUTHORS INDEX

- Bathen, R. 1 225
 Batra, P. C., *see* Puntambekar, S. V.
 Bauby, P. 2 137
 Baudendistel, M. E. 3 349
 Bauer 5 254
 Bauer, D., *see* Zach, L. W.
 Bauer, H. L. 5 17
 Bauer, K. H., and Moll, H. 4 122
 Bauersachs, E. 4 195
 Baumhofer, L. G., *see* Weiss, F.
 Bavendamm, W. 1 46
 — and Reichelt, H. 2 144
 Bayer, L. D. 4 161
 — *see* Shaw B.
 Bavier, B. 5 291
 Bavngaard, A. A. 5 255
 Baxter, D. V. 1 149, 2 200, 4 95, 220, 5 171
 — and Manis, W. E. 2 26
 — and Varner, R. W. 5 38
 — and Wadsworth, F. H. 1 247
 Baxter, S. N. 4 103
 Bayley, P. 3 224
 Baylis, G. T. S. 3 30
 Bayliss, N. S., *see* Smith, M. E.
 Beach, J. E. G. 1 269
 Beadle, N. C. W. 2 70
 Beal, J. A. 2 74, 4 192, 5 141
 — and Massey, C. L. 4 132
 — and McClintick, K. B. 5 284
 Beall, H. W. 1 128, 186, 2 70, 71, 243, 3 336
 — *see* Wright, J. G.
 Beard, J. S. 2 165, 280, 3 105, 266, 4 19, 158, 162, 5 96, 240
 Beard, R. L., and Wallace, P. P. 4 160, 224, 5 24
 Beattie, R. K. 2 191
 Beaulne, J.-I. 3 346
 Beaven, G. F., and Oosting, H. J. 1 147
 Beazley, W. B., Johnston, H. W., and Maass, O. 1 179
 Beck, C. W. *see* Forbes, R. D.
 Beck, J., and Jahrstorfer, M. 5 41, 264
 Becker, G. 3 137, 4 41, 5 25
 — and Schulze, B. 5 47
 Becker, W. B. 1 154, 5 117
 Becker-Dillingen, J. 2 282
 Becking, J. H. 3 353
 Beckley, V. A. 5 272
 Bedard, A. 5 70
 Beddie, A. D. 4 92
 Bedell, G. 1 194
 Bednall, B. H. 1 196, 3 21, 4 167
 — *see* Stoaite, T. N.
 Bedwell, J. L., and Childs, T. W. 5 277
 Beebe, C. W., *see* Rogers, J. S.
 Beecher, H. W., and Watt, R. D. 2 320
 Beekman, H. A. J. M. 1 303
 Beer, F. 3 122
 Beeson, C. F. S. 1 249; 4 254, 5 24
 — and Chatterjee, N. C. 2 28, 245
 — and Chatterjee, S. N. 2 28
 Beglinger, E., *see* Sherrard, E. C.
 Behie, J. W. 3 57
 Behr, E. A., *see* Kaufert, F. H.
 Behre, C. E. 1 191
 Bedre, C. E., and Reineke, L. H. 5 283
 — *see* Jensen, V. S.
 Beiler, A. 4 122
 Beilmann, A. P. 2 214, 3 198
 — *see* Anderson, E.
 Beirne, B. P. 4 254
 Belani, E. 5 51, 135
 Belavsky, E., and Mazal, E. 5 129
 Bell, C. C., *see* Benson, A. O.
 Bell, H. M., and Dyksterhuis, E. J. 5 255
 Bellu, T. 4 47
 Belotelkin, K. T. 3 19, 5 147
 — Reineke, L. H., and Westveld, M. 3 140, 4 99
 Belov, S. V. 3 337
 Belyaev, I. A. 4 256
 Benassi, L. 5 64
 Bender, T. R. 3 341, 5 280
 — *see* Pirone, P. P.
 Beninde, R. 1 32, 129
 Benne, E. J., *see* Comar, C. L.
 Bennett, A. L. 3 334
 Bennett, C. W. 2 191
 Bennett, E. C., *see* Anderson, E.
 Bennett, H. H. 2 167, 4 200
 Bennett, R. G. 4 117
 Bennie, J. 5 265, 266
 Bensend, D. W. 4 216
 Benson, A. O. 2 56, 147, 3 56, 315
 — and Bell, C. C. 5 129
 — and Wollin, A. C. 5 185
 — *see* Jensen, V. S.
 Benson, H. K. 2 149, 4 185, 5 135
 — and Lucas, J. E. 2 309
 — and Walton, A. T. 3 60
 — *see* Skewes, T. J.
 Benson, L. 4 21, 5 106
 Benson, R. B. 1 251, 2 23
 Benton, V. L., and Ehrlich, J. 3248
 Berezina, V. M. 4 133
 Berg, A. 2 246
 Bergeck, T., *see* Hägglund, E.
 Bergius, F. 5 268
 — and Koch, F. 5 128
 Bergström, H. 1 45, 2 154, 314, 3 148, 4 44
 Bergström, I. 2 117
 Berkel, A., *see* Mayer-Wagelin, H.
 Berkley, E. E., *see* Bailey, I. W.
 Berkness, I. R. 2 227
 Berliner, I. 4 177
 Berliner, J. F. T. 2 227, 3 327, 4 241
 — and Kvalnes, H. M. 5 125
 Bernardini, F. 3 101
 Bernhard, R. 4 65
 Bernhard, R. K., Perry, T. D., and Stern, E. G. 2 148
 Bernier, G. H. 3 72
 Berry, A. G. U., and Cater, J. C. 3 323
 Berry, E. W. 3 97, 192, 4 11
 Berry, J. R. 1 271
 Berry, P. A. 2 127
 — and Swanson, T. B. 4 50, 5 52
 Berthelot, C. 3 150, 4 46, 48, 5 268
 Bertleff, V. 1 181
 Bertrand, G., and Brooks, G. 2 49, 448, 5 115
 — and Silberstein, L. 3 23
 Bertsch, K. 4 82
 Beschler, R. H., *see* Drefahl, L. C.
 Besley, L. 4 196
 Bess, H. A. 5 39
 Bethel, J. S. 2 309, 3 49, 5 182
 Betts, H. S. 1 270, 2 44, 217, 3 132, 307, 4 105, 230, 5 180
 Betts, T. F. 3 183, 4 24
 Bevan, A. 4 11, 5 70
 Beversluis, J. R. 1 151
 Bhargava, M. P., and Singh, C. 4 123, 5 188
 — and Singh, S. K. 5 44
 Bharucha, F. R., and Navalkar, B. S. 5 234
 Bhattacharya, R., and Heath, G. D. 1 184
 Bhowmik, T., *see* Thakur, A. K.
 Bianchi, A. T. J. 3 193
 Bickerstaff, A. 4 105
 Bickford, C. A. 4 54
 — and Bruce, D. 2 71
 Bieler, E. 3 227
 Bielick, O. 4 185
 Bier, J. E. 1 140, 142, 2 194, 4 55
 — *see* Connors, I. L.
 — *see* Mounce, I.
 Biemann, O. 4 237, 5 43
 Bigelow, J. R. 1 185
 Bilberg, A. 3 98
 Billings, W. D. 4 95
 — *see* Oosting, H. J.
 Billington, P. S., and Fiedler, E. L. 5 265
 Bingham, R. T. 4 126
 — and Ehrlich, J. 5 277
 Birch, T. C. *see* McKee M.
 Birch, T. T. C. 4 118
 Birschard, W. H. 4 176
 Bird, P. 1 199
 Bird, R. G. 2 165
 Birkinshaw, J. H., and Findlay, W. P. K. 2 51
 —, Findlay, W. P. K., and Webb, R. A. 2 222, 4 234
 Bisby, G. R. 5 242
 — *see* Ainsworth, G. C.
 Bishop, G. N. 3 114
 — and Duncan, W. H. 3 206
 Bishopp, F. C. 5 283
 Biswas, K. 4 94
 Biswell, H. H., and Foster, J. E. 4 182
 — Southwell, B. L., Stevenson, J. W., and Shepherd, W. O. 5 129
 Bitter, B., and Niklas, O. F., 1 190
 Bittner, J. 5 120
 Bjarnason, H. 2 35
 Björkman, A. 4 123
 Björkman, E. 2 11, 4 126, 5 11, 160, 235
 Blackburn, K. B., *see* Tomkeiff, S. I.
 Blackman, M. W. 4 22, 224, 5 108, 174
 Blackmon, G. H. 5 52
 Blair, G. D. 4 37
 Blair, K. G. 5 24
 Blaisdell, D. J., *see* Davidson, R. W.
 Blaisdell, J. P., *see* Young, V. A.
 Blake, S. F. 5 100
 — and Atwood, A. C. 5 18

AUTHORS INDEX

- Blake, S. T. 4 219, 5 19
 Blakstad, L. 5 288
 Blanck, E. 1 207
 Blanco, C. E. 5 21
 Bland, D. E. 4 176
 Blank, F. 1 144
 Blauvelt, W. E., *see* Hartzell, A.
 Bleton, C. A., and Fienzet, L. 5 65
 Blew, J. O., *see* Hoyle, R. J.
 — *see* Hunt, G. M.
 Bloch, R. 3 306, 5 92
 Bloembergen, S. 2 112, 289
 Bloom, P., Jahn, E. C., and Wise,
 L. E. 4 233
 Blum, B. 4 43, 178, 5 17
 Boardman, A. D. 3 231
 Boardman, W. 3 356
 Bochet, J. 1 73, 86
 Bodrov, V. A. 2 43, 188
 Boehm, R. M. 2 149
 — *see* Mason, W. H.
 Boerger, A. 4 84
 Boerner, A. L. 5 251
 Boggess, W. R., Swarthout, P. A.,
 and Toole, E. R. 4 247
 Böhm, W. 5 47
 Böhme, R. W. 5 53
 Bohmer, J. G. 1 107, 4 63, 5 288
 Bois, E., and Chubb, W. O. 4 154
 — and Dugal, L. C. 2 238
 Boisfontaine, A. S. 4 180
 Boiteux, H. 5 34
 Boke, N. H. 2 124
 Bokor, R. 3 315
 Bollaert, R. 3 58
 — *see* Crafts, E. C.
 Bollen, W. B., *see* Miller, P. W.
 Bollor, E. R. 2 231, 4 238
 Bomberger, E. H., and Baker, L. F.
 4 122
 Bonar, L. 4 189
 Bond, J. 5 37
 Bond, R. M., *see* Hawbecker, A. C.
 Bond, W. E. 1 197
 — and Rhodes, R. R. 4 137
 Bond, W. R. 4 176
 Bondar, G. 5 132
 Bondartzeff, A., and Singer, R. 3 205
 Bongini, V. 2 136
 Bongberg, J. W., *see* Salman, K. A.
 Bonnemann, A. 2 32
 Bonney, M. C. 2 161
 Bonsma, J. C. 4 123
 Boomsma, C. D., and Adams,
 A. J. S. 4 284
 Boon, D. A. 1 305
 Boos 2 9
 Booth, H. A. 2 131
 Bor, N. L. 1 24, 25, 27, 3 203, 294,
 295, 5 20, 94, 97
 Borg, J. 4 239
 Borglin, J. N. 5 52
 — Mosher, P. R., Noble, B., and
 Punshon, T. 5 270
 Borisov, S., *see* Némec, A.
 Bornand, G. H. 1 91
 Bornebusch, C. H. 1 34, 88, 92, 139,
 163, 256, 3 283, 5 174, 175, 248,
 252, 255
 — and Ladefoged, K. 5 197
 Bose, S. R. 1 277
 Bose, S. R., and Sarker, S. N. 4 216
 Bosq, J. M. 5 285
 Bostrum, E. 5 266
 Boswell, A. B. S. 2 288
 Bosworth, J. 4 187
 Böttcher 4 52
 Bottenburg, M. van 2 299
 — and Govers, A. 3 303
 Bottini, O. 2 240
 Botto-Micca, G. 4 115
 Boughton, R. V. 5 58, 273
 Boulhol, P. 5 10
 Boulton, E. H. B. 1 169, 3 307
 — and Jay, B. A. 5 196
 Boureau, E. 4 230, 5 98
 Bourne, R. 4 100
 Bourquin, A. 3 153, 4 48, 181
 Bouthiaux, S. 2 155
 Bouvet, P., *see* Malmy M.
 Bouvier, H. 4 181
 Bowen, C. M., *see* McCormick, L. E.
 Bowen, J. W. 4 120, 239
 — and Lomberg, B. R. 3 62, 146
 Bowen, P. R. 2 285
 Bower, C. A., and Truog, E. 2 185
 Bower, J. R., Cooke, L. M., and
 Hibbert, H. 5 183
 Bower, R. P. 3 18
 Bowling, R. T. 3 68, 155
 Bowman, A. B. 2 202, 4 136
 Boyce, A. M. 5 282
 Boyce, J. S. 2 194, 3 296
 — and Hepting, G. H. 5 184
 Boyd, G. R. 4 111
 Boyd, I. L., *see* Aikman, J. M.
 Boynton, F. R. 2 309
 Boysen-Jensen, P. 2 15
 Bradley, M. V., *see* Goodspeed,
 T. H.
 Bradley, R. L. 2 334
 Bradshaw, K. E. 3 35
 — and Reveal, J. L. 5 26
 Brahmawar, R. N. 2 321
 Braithwaite, J. D. 2 251, 5 65
 Brajnikoff, B. J. 1 181
 Bramble, W. C., and Goddard,
 M. K. 4 163, 5 174
 — and Holst, E. C. 3 247
 — *see* Alderfer, R. B.
 Brammanis, L. 2 52, 327
 Bramstedt, F. 2 22
 Brand, A. R. 1 302
 Brand, F. T. 2 238
 Brander, J., *see* Aro, P.
 Brandstrom, A. J. F. 3 56
 — and Flanagan, G. C. 2 148
 Branford, J. R. 4 52
 Branscheid, F., *see* Jayme, J.
 Branscheidt, P. 2 118
 Bransford, W., and Munger, T. T. 1
 244
 Brantseg, A. 3 354
 Brantsma, W. 1 230
 Brasnett, N. V. 2 40, 4 198, 5 213
 Brass, L. J. 4 18
 Bratton, A. W. 3 65, 229, 4 241
 — *see* Reineke, L. H.
 Braucher, O. L., and Southwick,
 R. W. 4 124
 Braude, R. 5 270
 Braun, E. L. 2 126, 4 213, 5 20
 Braun, R. 4 129
 — *see* Schmied, H.
 Brauns, F. E. 2 303
 — *see* Brookbank, E. B.
 Braxatoris, Z. 1 108
 Bray, M. W. 1 276, 4 39, 244
 — and Chidester, G. H. 3 320
 —, Chidester, G. H., and Curran,
 C. E. 1 285
 — and Martin, J. S. 3 60, 319, 4 40,
 175, 5 265
 —, Martin, J. S., and Schwartz,
 S. L. 1 284, 2 58, 4 39
 — and Paul, B. H. 5 45
 — and Schwartz, S. L. 3 142
 — *see* Pillow, M. Y.
 Bredon, G. W. D. 2 69, 188
 Brecht, W., and Kilpper, W. 2 57
 —, Schröter, H., and Süttinger, R. 2
 150
 Breckon, J. L. 5 71
 Bredenkamp, J. 4 254
 Bregadze, N. N., *see* Yatsenko-
 Khmelevski, A. A.
 Brierm, K. 5 264
 Breitenfeld, E., and Mothes, K. 4 11
 Brelin, P. 2 316, 317
 Bremekamp, C. E. B. 2 290, 3 37
 Brenner, W. H. 1 162
 — and Wilde, S. A. 3 103
 — *see* Riker, A. J.
 Brewer, E. G. 3 78
 Brewster, D. R. 4 64
 Brichet, L. 2 72, 3 85
 Brickman, L., Pyle, J. J., Hawkins,
 W. L., and Hibbert, H. 2 143
 —, Pyle, J. J., and Hibbert, H. 1
 175, 2 143
 Briegleb, P. A. 2 331, 3 280, 4 260,
 5 206
 — and Dunford, E. G. 2 163
 — and Girard, J. W. 5 67
 — *see* Munger, T. T.
 Brigden, A. C. 4 46
 Briggs, A. H. 1 259
 Briggs, C. W. 5 148
 Brimblecombe, A. R. 2 304
 Brims, M. J. G. 4 112
 Brinsley, G. G. 2 164
 Brison, F. R., *see* Flory, W. S.
 Broach, J. B. 3 324
 Broadfoot, W. M., and Pierre, W. M.
 1 230
 Brocks, K. 1 74
 Brockway, G. E. 3 194
 Bromée, F. 1 104, 5 251
 Bromley, R. F., and Rudge, E. A. 1
 174
 Bromley, S. W. 1 127, 2 328
 — *see* Felt, E. P.
 Bromley, W. S. 3 226, 4 111, 230
 — *see* Andrews, H. J.
 Brookbank, E. B. 1 284
 — and Brauns, F. E. 2 51
 —, Brauns, F. E., Lewis, H. F., and
 Buchanan, M. A. 5 115
 Brooks, G., *see* Bertrand, G.
 Brooks, R. L. 1 29, 227, 3 211, 266,
 299, 4 115, 198
 — Adamson, A. M., Baker, R. E. D.,
 and Crowley, S. H. 3 137

AUTHORS INDEX

- Brophy, M. J. 2 65, 4 180
 Brotero, F. A. 1 271, 2 47
 Broulhiet, G. 4 181
 Brouse, D. 1 178, 2 307
 Brown, A. A. 3 160
 — and Davis, W. S. 1 186
 Brown, A. W. A. 2 195, 327, 3 165
 — and Daviault, L. 4 133
 — and Fleming, H. S. 2 202
 — and McGuffin, W. C. 4 160
 — *see* Halliday, W. E. D.
 Brown, C. B., and Barnes, F. F. 2 69
 Brown, C. R. 1 288
 Brown, C. S. 3 208
 Brown, D. M. 3 30
 Brown, D. W. 5 262
 Brown, F. L., *see* Hallauer, F. J.
 Brown, H. P., and Panshin, A. J. 3 49
 Brown, J. W. 1 237
 Brown, K. B. 3 281
 Brown, L. P. 1 103
 Brown, N. A. 3 162
 Brown, N. C. 1 109, 2 254, 334, 3 90, 268, 5 185, 272
 — *see* Hoyle, R. J.
 Brown, R. F. 3 261
 Brown, R. L., *see* McLaughlin, W. T.
 Brown, R. M., *see* Schantz-Hansen, T.
 Brown, R. T., *see* Potter, G. F.
 Brown, R. W. 5 231
 Brown, W. E. 3 72
 — and Paquette, R. G. 2 73
 Browne, F. G. 1 43, 154, 3 170
 Browne, F. L. 5 124
 Browning, B. L. 5 115
 Brownlie, D. 2 317, 4 185
 Bruce, D. 4 99
 — and Schumacher, F. X. 4 194
 — *see* Bickford, C. A.
 Bruce, H. D. 1 103, 267, 3 243
 — *see* Buck, C. C.
 — *see* Ikenberry, G. J.
 Bruère, M. B. 3 180
 Bruev, S. M. 2 31
 Bruggisser 2 19
 Brundage, F. H. 5 214
 Brundage, R. C. 2 67, 5 293
 Bruner, M. H. 1 200, 2 166, 3 208, 4 263, 5 68
 Brunn, W., *see* Hecker, H. W.
 Brunori, B. 1 226
 Brush, W. D. 1 172, 3 132, 133, 4 31
 Bryan, J. 199, 3 232
 — and Doman, L. S. 2 53
 Bryan, J. E., *see* Page, R. H.
 Bryan, M. M. 5 68, 288
 Bryant, S. A., *see* Campbell, W. G.
 Buble, W. L. 1 178
 Buchanan, L. L. 3 168
 Buchanan, M. A., *see* Brookbank, E. B.
 Buchanan, T. S. 2 19, 20
 — and Englerth, G. H. 3 240, 5 116
 — *see* Toole, E. R.
 Buchanan, W. D. 2 286, 3 79, 4 127
 — and May, C. 4 58
 — and Smucker, S. J. 4 190
 — *see* Wolfenbarger, D. O.
 Buchholz, E. 1 13, 167, 200, 2 111, 4 66
 Buchholz, J. T. 1 143, 247, 3 28, 29, 290, 4 17, 92, 218
 — and Kaeiser, M. 2 196
 — *see* Butts, D.
 Buchwald, N. F. 1 142, 176
 Buck, C. C., Bruce, H. D., Abell, C. A., and Fons, W. L. 4 124
 — and Hughes, J. E. 1 131
 Buckman, S. J., and Pera, J. D. 4 238
 — *see* Rees, L. W.
 — *see* Schmitz, H.
 Budhiraja, K. L., and Dey, A. C. 5 268
 — *see* Griffith, A. L.
 Budkevich, E. V., and Tikhomirov, B. A. 2 24
 Buell, E. D. 2 111
 Buell, J. H. 2 43, 206, 332, 4 61, 5 32, 205
 — *see* Barrett, L. I.
 Buell, M. F., and Cain, R. L. 5 20
 Buffault, P. 1 226, 3 71
 Buhler, E. O. 4 54
 Bük, F. 1 57
 Buktshynov, A. D., and Andreev, N. A. 1 291
 Bulchis, R., *see* Chapman, H. H.
 Bull, H. 1 167, 179, 3 126, 4 229, 5 33
 — and Putnam, J. A. 2 299, 3 126, 127, 130
 — and Reynolds, R. R. 5 246
 Bumstead, A. P. 5 59
 Bundy, O. 1 158, 165; 2 278, 3 267
 Bunting, B. 1 164
 Burgeon, L. 1 28
 Burger, H. 1 17, 300, 301, 2 79, 3 102, 175, 4 100, 110, 135, 162, 5 27, 276
 Burgess, A. F. 3 257
 — and Baker, W. L. 2 75
 Burkholder, P. R., and McVeigh, I. 4 154
 — and Snow, A. G. 4 154
 Burkland, E. R. 5 269
 Burks, G. F., and Wilson, R. C. 1 194
 Burleigh, T. D., *see* Pessin, L. J.
 Burns, G. P. 5 260
 Burns, G. R. 4 154
 Burns, L. V. 5 41
 Burns, M. M., Taylor, N. H., Dixon, J. K., and Hodgson, L. 2 155
 Burns, P. Y. 4 19
 Burock, R. 3 180, 181
 Burrage, C. H. 5 233
 Burstall, A. F. 4 47
 Burt, L. B. 2 124
 Burt, W. R. 2 254, 3 180
 Burton, W. J. 4 182
 Burtt, B. D. 2 198, 4 19
 Burtt Davy, J. 2 127
 — and Kinloch, J. B. 1 223
 Buse, R. 5 47
 Buser, R. 3 295
 Bushnell, T. M. 1 300
 Buteyn, E. K., *see* Comar, C. L.
 Butler, E. J. 1 129
 Butovitch, V. 5 65
 — and Spaak, H. 1 278, 5 259
 Butt, F. H., *see* Johannsen, O. A.
 Butter, E. J. 1 129
 Butterfield, N. W., and McClintock, J. A. 3 200
 Buttrick, P. L., 3 91, 331, 5 209
 Butts, D., and Buchholz, J. T. 28
 Buzzzone, Z. 3 175
 Byallovich, Yu. P. 3 131
 Byam, L., *see* Riker, A. J.
 Byram, G. M. 2 157, 196, 244, 4 187
 — and Jemison, G. M. 5 275
 Cady, J. G. 3 286
 Caguioa, V. 1 36
 Cahal, R. R. 4 244
 Cahalane, V. H. 1 102
 Cahen, E. 5 103
 Cain, R. L., *see* Buell, M. F.
 Cain, S. A. 2 181, 5 85, 86, 143
 Cain, W. C. 1 106
 Caius, J. F. 5 51
 Calabro, E. A. 5 41
 Callan, E. McC. 2 28, 123, 4 249, 5 203
 Callenbach, J. A., *see* Chamberlin, T. R.
 Callin, G. 2 241
 Calnan, E. J., and Franklin, J. N. 3 69
 Calvino, M. 2 238
 Cameron, A. E. 2 22, 328, 330
 Cameron, D. R. 2 80, 3 88, 4 11, 82
 Cameron, E. 1 154, 3 254
 Cameron, F. K., *see* Chen, W.-H. W.
 Camp, W. H. 3 116
 — and Gilly, C. L. 5 170
 Campbell, C. W. 3 90
 Campbell, J. F. 1 187
 Campbell, R. S. 2 197
 Campbell, W. A. 1 189, 240, 2 123
 — and Davidson, R. W. 1 143, 2 18, 119, 234, 3 77, 162, 5 279
 — and Spaulding, P. 4 168, 228
 — *see* Davidson, R. W.
 Campbell, W. G. 3 64, 4 159
 — and Bryant, S. A. 2 304, 3 52
 — and McGowan, J. C. 1 152
 — *see* Hirst, E. L.
 Campredon, J. 1 99
 Camus, A. 2 27
 — and Gombault, R. 2 27
 Candy, R. H. 1 159, 4 135
 Canfield, R. H. 3 114
 Cañizo, J. del 4 191
 Cann, F. R. 1 250, 2 152
 Cansdale, G. S. 1 122
 Canzanelli, A. 1 154
 Cappellini, A. 3 308
 Cappuccini, G. 1 162
 Carabia, J. P. 3 32, 4 158, 159
 Cárdenas, M. 4 83, 93
 Carlson, K. A. 2 290
 Carlson, R. E., *see* Raup, H. M.
 Carlson, T. A. 4 48
 Carman, R. S. 3 176
 Carmelich, J. N. F. 3 327
 Carneiro, J. G. 4 183

AUTHORS INDEX

- Caroselli, N. E. **3** 162
 — and Howard, F. L. **2** 72, **192**, **3** 76,
4 56, **57**, **127**, **191**
 Carpelan, L. H., *see* Struble, G. R.
 Carpenter, C., and Ritter, G. A. **2** 58
 Carpenter, J. R. **2** 127
 Carpenter, R. D. **3** 172
 Carroll, G. **5** 167
 Carroll, G. H. **5** 13
 Carswell, T. S., and Hatfield, I. **2** 61
 Cartellieri, E., *see* Pisek, A.
 Carter, C. L. **5** 234
 Carter, J. C. **1** 263, **2** 194, **326**, **3** 342
 — *see* Tehon, L. R.
 Carter, R. H. **1** 223
 Cartiaux, J., *see* Meurice, R.
 Carton, P., and Sallenave, P. **1** 80
 Cartwright, K. St. G. **2** 121, **3** 231,
4 35, **5** 37
 — and Findlay, W. P. K. **4** 188
 Carullo, F. **2** 138
 Carvalho, V. J. de **5** 99
 Cash, E. K. **4** 189
 — *see* Lohman, M. L.
 Cash, J. D., and Cash, M. G. **4** 47
 Cash, M. G., *see* Cash, J. D.
 Cassady, J. T., and Glendening,
 G. E. **2** 188
 Castelani, E., and Ciccarone, A. **2**
119
 Castellanos, A., and Pérez-Moreau,
 R. A. **5** 19
 Castillo, V. A. **5** 52
 Castro, A. O. **5** 232
 Cataline, E. L., *see* Powers, J. L.
 Cater, J. C. **1** 232, **2** 133, **3** 213
 — *see* Berry, A. G. U.
 Cation, D. *see* Strong, F. C.
 Catterall, R. D. **3** 352
 Caulfield, J. G. L., *see* Jenness, L. C.
 Cazalis, L. **4** 47
 Ceballos y Fernandez de Cordoba,
 L. **5** 20
 Ceccetta, G. N. **5** 243
 Cederquist, K. **4** 44
 Cermak, F. **5** 293
 Cernescu, T. **2** 82
 Chacharowska, H., *see* Kozlowski,
 A.
 Chadwick, L. C. **2** 204, **4** 158, **227**,
5 247
 — and Kiplinger, D. C. **1** 260
 — and Swartley, J. C. **3** 201, **4** 216
 Chadwick, T. C., and Palkin, S. **3** 332
 Chaiken, L. E. **1** 301, **3** 41
 — *see* MacKinney, A. L.
 Chalk, L. **1** 72
 Challenger, J. W. **2** 306, **4** 235, **5** 40
 Chamberlin, T. R., Fluke, C. L.,
 and Callenbach, J. A. **5** 245
 Chamberlin, W. J. **3** 256
 Chambers, E. L., and Kouba, T. F.
2 72
 — and Thompson, N. F. **3** 258
 Chambers, T. B., *see* Nichols, M. L.
 Champagne, J., *see* Lofgren, E.
 Champion, H. G. **1** 246, **2** 164
 — and Trevor, Sir Gerald **1** 111
 Chand, K. **2** 69
 Chandler, J., *see* MacLeod, A.
 Chandler, J. M. **5** 149
 Chandler, R. F. **1** 18, **2** 65, **113**, **115**,
3 284, **5** 99
 — Schoen, P. W., and Anderson,
 D. A. **5** 209
 — *see* Eaton, T. H.
 — *see* Heiberg, S. O.
 — *see* Mitchell, H. L.
 Chandler, S. C., and Flint, W. P. **5**
136
 Chandler, W. G. **2** 43
 Chandler, W. H. **5** 133, **256**
 Chaney, R. W. **4** 11, **5** 86
 Chang, H. L., *see* Hsu, S. H.
 Chapel, W. L. **4** 36
 Chaplin, C. J., and Nevard, E. H.
1 174
 Chaplin, M. P. **5** 122
 Chapline, W. R. **5** 293
 Chapman, A. D., and Scheffer, T. C.
3 54
 Chapman, A. G. **3** 119, **4** 95
 Chapman, G. L., *see* Adams, W. R.
 Chapman, G. W. **4** 195, **5** 124
 Chapman, H. H. **2** 82, **333**, **3** 210,
300, **4** 10, **62**, **224**, **246**, **258**; **5** 26,
149, **246**
 — and Bulchis, R. **2** 216
 Chapman, R. A. **2** 39
 — *see* Gemmer, E. W.
 — *see* Schumacher, F. X.
 Charbonnier, H. Y. **4** 114
 Chard, J. S. R. **1** 124
 Chardón, C. E. **3** 101
 Charisius, K. **5** 265
 Charlton, G. C. **4** 188
 Charter, C. F. **3** 285
 Charter, H. E., *see* Daubenmire,
 R. F.
 Chattaway, M. M. **1** 272
 Chatterjee, B., and Das, B. K. **1** 129
 Chatterjee, N. C. **2** 287
 — *see* Beeson, C. F. C.
 Chatterjee, P. N. **2** 28, **4** 253
 Chatterjee, S. N., *see* Beeson, C. F. C.
 Chaturvedi, M. D. **5** 49, **110**
 Chaudhuri, B. R., *see* Narayana-
 murti, D.
 Chavannes, E. **3** 205
 Chaylakhyan, M. Kh., and
 Turetskaya, R. Kh. **5** 235
 Cheadle, V. I. **5** 166
 Chein Hoe, T. **1** 302
 Chen, C. Y., *see* Rohmeder, E.
 Chen, K. K., *see* Steldt, F. A.
 Chen, L., *see* Merrill, E. D.
 Chen, W.-H. W., and Cameron,
 F. K. **4** 114, **233**
 Cheney, E. G. **1** 168
 Cheng, W. C. **2** 27
 Cheo, Y. C. **3** 300
 Cherian, M. C., and Basheer, M. **2**
286
 Cherry, C. L. **3** 244
 Chesnokov, F. A. **5** 131
 Chestnut, A. F., *see* Taylor, R. L.
 Chevalier, A. **1** 149, **151**, **2** 24, **66**,
127, **155**, **4** 96, **5** 132
 Cheyne, G. C. **3** 289
 Cheyney, E. G. **5** 287
 Chiariotti, C. **5** 17
 Chibeleanu, A. **2** 162
 Chidester, G. H., and Bray, M. W.
3 320
 —, Bray, M. W., and Curran, C. E.
1 285
 — and McGovern, J. N. **2** 149, **4**
39, **40**, **237**
 — *see* Pillow, M. Y.
 Chidester, M. S. **1** 181, **2** 145, **4** 171
 — *see* Richards, C. A.
 — *see* Scheffer, T. C.
 Child, R., and Nathanael, W. R. N.
4 51, **123**, **5** 271
 Childs, T. W. **1** 266
 — and Kimmey, J. W. **1** 239
 — *see* Bedwell, J. L.
 — *see* Grant, T. J.
 Chilton, St. J. P., *see* Leach, J. G.
 China, W. E. **5** 245
 Chinte, F. O. **2** 39
 — *see* Cruz, E. de la
 Chiriță, C. D. **1** 229, **231**
 — and Balănică, T. P. **1** 229
 Chisman, H. H. **3** 34, **4** 157
 — and Schumacher, F. X. **2** 163
 Chistyakov, A. R. **2** 133, **4** 226
 Cholodnyi, N. G., and Gorbovskiy,
 A. G. **1** 134
 Chopra, Sir R. N., *see* Dutt, A. T.
 Chopra, R. S. **1** 28, **29**, **49**, **90**, **292**,
298, **2** 137, **214**, **4** 200
 Chorin, M. **2** 20
 Choudary, P. **1** 75, **260**
 Choudary, K. S. **4** 49
 Chowdhury, K. A. **1** 171, **2** 301, **4**
231, **5** 113, **181**, **257**
 — and Tandan, K. N. **5** 181
 Christ, J. H. **2** 331
 Christensen, C. M. **2** 121, **3** 246
 — and Kaufert, F. H. **4** 189
 —, Kaufert, F. H., Schmitz, H., and
 Allison, J. L. **4** 221
 — *see* Darley, E. F.
 — *see* Hodson, A. C.
 — *see* Leach, J. G.
 — *see* Lorenz, R. C.
 Christian, M. B. **2** 152, **229**, **4** 234
 Chrystal, R. N. **5** 201
 Chubb, W. O., *see* Bois, E.
 Church, V. V., *see* Anderson, R. E.
 Ciccarone, A., *see* Castellani, E.
 Cid y Bergman, M. **5** 270
 Ciferri, R. **1** 26, **147**
 Cilliers, A. C., and Wyk, J. H. van
2 76
 Clapp, R. T., *see* Hawley, R. C.
 Clark, A. F. **1** 153, **2** 73, **4** 234
 Clark, E. P. **5** 90, **259**
 Clark, E. T. **2** 217
 Clark, G. L., *see* Gross, S. T.
 Clark, O. S. **5** 128
 Clark, R. B., *see* Anderson, E.
 Clarke, C. H. D. **2** 253
 Clarke, I. D., Steiner, E. T., and
 Frey, R. W. **5** 130
 — *see* Frey, R. W.
 Clarke, J. A. **1** 197
 Clarke, J. F. G. **5** 141
 Clarke, S. H. **1** 12, **41**, **144**, **171**
 Clarke, W. B. M. **2** 215
 — *see* Schierbeck, O.
 Clarke-Butler-Cole, R. F. **2** 254, **5** 251

AUTHORS INDEX

- Clausen, C. P. 3 170
 Clausen, R. 1 189
 Clements, F. E. 5 99
 — and Shelford, V. E. 2 167
 Clements, H. F. 1 133, 3 24
 Clements, J. B. 1 19, 303, 4 169, 5 31
 — and Topham, P. 3 105
 Clepper, H. 3 120
 Cliff, E. P., and Anderson, R. E. 2 158
 Cline, A. C. 1 232, 5 150
 — and Spurr, S. H. 4 98, 220
 — see Potts, S. F.
 Clotofski, E., and Herr, W. 5 239
 — and Junge, W. 5 17
 —, Weikert, H., and Nick, H. 3 106
 — see Friese, H.
 Coats, R. H., and Lewis, R. G. 2 8
 — and MacLellan, M. E. 2 8
 Cobbe, T. J. 5 101
 Cockrell, R. A. 3 50, 4 231
 Coffey, T. M. 2 8
 Coghill, R. 3 69
 Cohen, H. 2 65
 Cohen, W. E., and Dadswell, H. E. 1 179
 — and Mackney, A. W. 2 51
 Coile, T. S. 1 26, 231, 2 289, 3 102, 104, 4 157
 — and Gaiser, R. N. 4 150
 — see Korstian, C. F.
 Colby, V. V. 2 244
 Collaer, P. 3 297
 Collardet, J. 1 51, 200
 Colleary, M. J. 2 64
 — see Harkom, J. F.
 Collet, M. H. 2 14
 Collett, D. G. 3 206
 Collett, M. H. 1 195
 Collett, O. 5 27
 Colley, R. H. 5 46
 Collier, F. S., and Lockie, J. R. 2 185
 Collingwood, G. H. 1 108, 249, 3 177, 179
 Collins, C. W. 2 75, 4 58, 128
 Collins, D. L., and Nardy, R. V. 5 283
 — Parker, K. G., and Dieterich, H. 3 79
 — see Hartzell, A.
 — see Parker, K. G.
 — see Rankin, W. H.
 — see Welch, D. S.
 Collins, T. W. 1 185, 3 316, 4 111
 Collins, W. B. 5 293
 Collins, W. S. 5 105
 Colquhoun, M. K. 3 170
 — and Morley, A. 5 244
 Colt, E. W., and Cornwell, E. D. 5 119
 Comar, C. L., Benne, E. J., and Buteyn, E. K. 5 163
 Compton, W., *see* Jewett, G. F.
 Conarro, R. M. 4 54
 Condit, G. R., Huberman, M. A., and McGuire, J. R. 3 305, 4 168
 Condon, R. W. 2 67
 Conger, E. F. 5 189
 Conklin, J. G. 5 141
 Conklin, R. P. 3 352
 Connaughton, C. A. 5 162
 Connaughton, C. A., *see* Hursh, C. R.
 Conners, I. L., McCallum, A. W., and Bier, J. E. 3 342
 Cook, A. S. 3 263
 Cook, C. 4 167
 Cook, D. B. 1 248, 2 42, 118, 3 207, 208, 299, 4 225
 — see Hamilton, W. J.
 Cook, L. F. 5 104
 Cook, M. T. 4 226
 Cook, O. F. 3 206
 Cook, W. C., *see* Lawson, F. R.
 Cooke, G. B. 5 51, 193
 Cooke, L. M., *see* Bower, J. R.
 Cooke, W. B. 3 32, 4 221
 Cooke-Dallin, M., *see* Delmonte, J.
 Cooley, J. S. 4 249
 Coolidge, H. J. 4 261
 Coombs, W. F. 1 197
 Cooper, W. E. 3 157, 4 134, 197
 Cooper, W. S. 4 18, 136
 Cooperrider, C. K., and Hendricks, B. A. 2 115
 Cope, J. A. 1 159, 3 88, 4 62, 5 68
 Copien 4 27
 Coplen, M. G. 4 227
 Coppick, S. 5 258
 — and Fowler, W. F. 1 276
 — and Jahn, E. C. 3, 221, 5 188
 Corby, H. D. L. 5 134
 Corman, C., and Baker, E. 2 306
 Cormio, R. 1 271
 Cornell, L. W., *see* Montonna, R. E.
 Corner, E. J. H. 2 261, 336, 3 294
 Cornman, J. F. 4 99
 Cornwall, G. F. 2 321, 3 192, 5 275
 Cornwell, E. D., *see* Colt, E. W.
 Corporaal, J. B. 2 30
 Correns, E. 5 122
 — and Schorning, P. 5 44
 Cortes, R. T. 2 66, 3 135
 Cory, E. N. 4 192, 5 283
 Cosens, G. G. 5 71, 291
 Cosgrove, J. R. 4 147
 Cossart, S. J. 5 109
 Cossey, J., *see* Somers, A. J.
 Costa, A. F. 2 318
 Costello, J. W. 2 253
 Coster, C. 1 20, 3 288
 Cottam, W. P., and Stewart, G. 2 197
 Cotterell, Sir R. 5 146
 Coulon, J.-P. 2 260
 Coulter, C. H. 4 259
 Coulter, J. W. 5 73
 Couppis, T. 3 205
 Cowie, D. 4 200
 Cowlin, R. W. 2 184
 — and Moravets, F. L. 2 111
 — see Andrews, H. J.
 Cox, H. A. 1 311, 2 307, 3 228, 4 38, 113, 5 33, 187
 Cox, H. R. 2 319
 Cox, L. D., and Owens, R. E. 5 147
 Cox, M. J. 4 32
 Coyle, D. C. 3 180
 Crafts, A. S. 5 97, 166
 — see Abbe, L. B.
 — see Crafts, E. C. 3 280
 — and Bollaert, R. 5 70
 Craib, I. J. 1 165, 3 237, 5 74
 Craig, J. W. 2 287, 3 56
 Craig, R. B. 1 199, 2 254, 3 356, 4 139
 Craig, R. D. 2 183
 Craighead, F. C. 2 286, 3 241, 5 141
 — and St. George, R. A. 3 248
 —, St. George, R. A., and Wilford, B. H. 1 280
 Cramer, A. B., *see* Hunter, M. J.
 —, Hunter, M. J., and Hibbert, H. 1 175
 Crandall, B. S. 5 274, 279, 280
 Crane, H. L. 2 126
 Crawler, J. R., and Kellogg, L. F. 3 172, 259
 — see Emmer, R. E.
 — see Johnson, F. A.
 Crawshaw, T. H., and Recknagel, A. B. 1 301
 Creighton, G. W. I. 4 261
 Creighton, H. B., *see* Avery, G. S.
 Creighton, J. T. 283
 Cress, M., *see* Afanasiev, M.
 Cretziou, P. 1 246, 2 24, 3 113, 117
 Crevost, C., and Pételot, A. 4 49
 Crist, R. E. 5 293
 Crocker, C. S. 3 73
 Crocoll 4 82
 Croft, A. R., Woodward, L., and Anderson, D. A. 5 13
 Croft, C. M. 3 99
 Croizat, L. 2 290, 4 21, 97, 159, 222, 223, 5 106
 Cromer, D. A. N. 1 155, 2 204
 — and Pryor, L. D. 5 18
 Cronkhite, L. J. 4 111
 Crossie, H. W. 1 194
 Cross, F. B., *see* Vinson, C. G.
 Cross, G. L. 2 196, 4 17, 156, 5 97, 98
 Cross, J. C. 4 194
 Crossley, D. I. 2 293
 Crouch, J. C. 1 294
 Croucher, H. H., and Swabey, C. 1 20
 Crowdy, S. H., *see* Brooks, R. L.
 Crowell, I. H. 2 26, 145, 290
 Crowell, R. E. 5 213
 Croxton, W. C. 1 74
 Cruikshank, J. W. 2 8, 44, 111, 183, 278, 3 18, 192, 5 157
 — Eldredge, J. F., and Wheeler, P. R. 1 73
 — and Roberts, E. V. 3 113, 4 30
 Cruz, E. de la 3 355
 — and Chinte, F. O. 2 203
 — and Lansigan, N. P. 3 89
 Cuatrecasas, J. 3 295, 5 102
 Cubitt, G. E. S. 5 232
 Cuénot, L. 5 16
 Culley, M. 1 146
 Culp, R., *see* Baldwin, J. T.
 Culver, L. B., *see* Darlington, H. T.
 Cummings, L. J. 3 87
 — and Kemp, P. D. 2 184
 Cummings, W. H. 3 113, 129, 286, 4 29, 102
 Cummins, G. B. 3 76, 5 278
 Cummins, J. E. 1 99, 3 61
 — and Turnbull, R. F. 2 60
 — see Ratcliffe, F. N.
 Cumpson, D. M. 1 249

AUTHORS INDEX

Cunha, A. G. da 3 203
 Cunningham, R. N. 1 227
 — Moser, H. C., and White, H. G. 1 224
 — and White, H. G. 3 192
 — see Allison, J. H.
 Cuno, J. B. 1 283, 2 148
 Curran, C. E. 2 226, 3 60
 — see Chidester, G. H.
 — see Hallauer, F. J.
 Curry, J. R. 5 194
 — and Fons, W. L. 2 71
 — Gray, L. G., and Funke, I. C. 2 323
 — see Ikenberry, G. J.
 Curtis, J. D. 1 40, 96, 2 299, 3 251, 5 273
 Curtis, R. L., see Steavenson, H. A.
 Cushman, R. A. 2 128, 3 117
 Cusin, I. 149
 Custodio, T. 5 249
 Cypher, R. D. 4 188
 Czepek, R. 3 148
 Czoppelt, H. 1 25

 DADE, H. A. 2 284
 Dadswell, H. E. 1 170, 3 220
 — and Eckersley, A. M. 2 140, 4 32
 — and Ellis, D. J. 1 93, 2 141, 301, 3 53
 — and Langlands, I. 1 44
 — see Cohen, W. E.
 — see Greenhill, W. L.
 Dahl, S. 1 305
 Dahl, J. 2 139
 Dahlén, A. 3 136
 Dakan, A. S. 2 157
 Dake, H. C. 5 9
 Dale, I. R. 1 147, 2 199, 5 178
 Dalley, R. P. 1 290
 Dambach, C. A. 4 128
 Dameron, W. H., and Smith, H. P. 2 245
 Damgaard, J., see Arnbak, L.
 Damtoft, W. J. 3 91
 Dana, S. T. 4 137, 5 212
 Dangeard, P. 4 92
 Danhof, G. N. 2 158, 3 74, 354
 Daniel, H. A., see Elwell, H. M.
 Danilov, D. N. 4 226
 Danilovski, A. 4 238
 Danks, F. S. 1 285, 289
 Dannecker, K., 1 302, 310, 3 119, 122, 4 22, 162
 Dannfelt, M. J. 2 324, 5 200, 249
 Dansereau, P. 2 198, 5 102
 — and Lafond, A. 4 217
 Darbellay, J. 1 93
 Darley, E. F., and Christensen, C. M. 5 103
 Darling, C. S. 2 239
 Darling, L. 4 125
 Darlington, H. C. 5 101
 Darlington, H. T., and Culver, L. B. 1 248
 Darrah, L. B. 5 149
 Das, A., see Kanjilal, U. N.
 Das, B. K., see Chatterjee, B.
 Dash, G. C. 5 268
 Datta, R. M. 2 196

Daubenmire, R. F. 5 99, 159
 — and Charter, H. E. 4 216
 — and Slipp, A. W. 5 242
 Dauberschmidt, K., see Hofman, C.
 Dauphiné, A. 5 183
 Dauter 2 29
 Davenport, L. A. 3 266
 Davey, H. T. 3 320
 Davey, R. 1 110, 2 80, 155, 217, 261, 3 90, 91, 180, 349, 4 61, 62, 195, 5 66, 286
 Daviault, L. 3 253, 347, 4 192, 253
 — see Brown, A. W. A.
 Dávid, L. 3 155
 Davidov, M. V. 1 299
 Davidson, J. 4 243
 Davidson, J. B., see McGraw, C. F.
 Davidson, J. M. 3 263
 — see Kohnke, H.
 Davidson, R. W. 5 103
 — and Campbell, W. A. 1 143, 2 18, 119, 284, 3 77, 162, 5 272
 —, Campbell, W. A., and Blaisdell, D. J. 1 247
 —, Campbell, W. A., and Lorenz, R. C. 3 77
 —, Campbell, W. A., and Roth, E. R. 3 35
 —, Campbell, W. A., and Vaughn, D. B. 4 127
 —, Campbell, W. A., and Weber, G. F. 4 191
 — see Lohman, M. L.
 — see Lorenz, R. C.
 — see Shear, C. L.
 — see Wolf, F. A.
 Davies, A., see King, H.
 Davies, P. A. 4 103
 Davis, C. 3 291
 Davis, D. H. S. 4 192
 Davis, E. M. 2 305, 4 232
 — see Durgin, A. G.
 — see Johnson, R. P. A.
 Davis, J. E. 2 42
 — and Pond, J. D. 4 26
 Davis, J. H. 3 32
 Davis, J. J. 1 293, 4 41
 Davis, K. P. 5 145
 — and Klehm, K. A. 1 187
 — and Moss, V. D. 3 161
 — see Haig, I. T.
 Davis, M. B., see Hunter, A. W. S.
 Davis, P. W. 2 282
 Davis, S. H. 4 55, 5 109, 139
 — and Harry, J. B. 4 55
 Davis, T. A. W. 3 31
 Davis, V. B. 2 252, 3 192
 Davis, W. C. 3 340
 — and Latham, D. H. 1 295
 —, Wright, E., and Hartley, C. 5 137
 —, Wright, E., Latham, D. H., Young, G. Y., Lamb, H., and Hartley, C. 4 133
 —, Young, G. Y., Latham, D. H., and Hartley, C. 1 162
 —, Young, G. Y., and Orr, L. W. 1 240
 — see Gravatt, A. R.
 — see Lynch, D. W.
 Davis, W. E. 1 74
 Davis, W. S., see Brown, A. A.

Dawson, R. F., see Routien, J. B.
 Dawson, T. R. 4 183
 Day, B. B., and Austin, L. 1 137
 — see Haygood, T. F.
 — see Schumacher, F. X.
 Day, G. M. 2 186
 Day, M. W. 1 242, 258, 262, 2 284, 3 113, 4 99, 128
 Day, R. K., see DenUyl, D.
 Day, W. R. 1 186, 188
 Dayton, W. A. 5 243
 De, R. N. 3 123, 246, 296, 4 100, 158, 5 243
 — see Kanjilal, U. N.
 Dean, A. R., see Knight, R. A. G.
 Dean, G. A. 3 348
 Dearness, J. 3 341
 — and House, H. D. 5 103
 Deasy, G. F. 2 237
 Decker, E. E. 4 38
 Decker, G. C., see Travis, B. V.
 Decker, J. P., see Kramer, P. J.
 Deering, R. L., see Show, S. B.
 Deerwester, T. 4 192
 Deery, H. L. 3 310
 Défago, G. 4 220
 DeFrance, J. A. 3 355
 Degelius, G. 5 234
 Deichmüller, F. 5 272
 Deiters, A. M. 5 266
 Delaney, R. 1 177
 DeLeon, D. 3 251, 345
 Delevoy, G. 2 133
 Delisle, A. L. 3 108
 — see Thimann, K. V.
 Delisle, R. 4 263
 Delizo, T. 1 36
 Delmonte, J., and Cooke-Dallin, M. 5 45
 Delorme, G. 2 133
 — see Riou, P.
 Demetrescu, I. C. 1 91, 2 279, 3 89
 Demmon, E. L. 1 122, 2 181, 3 178, 190, 319, 4 51, 246
 Demortier, G. 2 134
 — and Fouarge, J. 2 41
 Den, H. 2 309, 3 60
 Dengler, A. 1 22, 236, 2 16, 4 90, 91, 148, 5 254
 — and Scammoni, A. 1 81
 Dengler, H. W. 3 139, 262
 Denning, J. A. 4 193
 Denoga, N. 1 162
 Dent, T. V. 5 29, 53
 DenUyl, D. 3 47
 — and Day, R. K. 2 255
 — see Kellogg, L. F.
 Deogun, P. N. 1 103, 5 97, 111
 Deppa, J. W. 1 292, 4 88
 Derevyagin, A. A., and Volodutskaya, Z. M. 2 234
 Deringer, H. 4 47, 5 191
 Dermen, H. 3 26
 Dersal, W. R. van 1 249
 Desai, J. L., see Almeida, J. F. R. d'
 Desai, M. H., see Garthwaite, P. F.
 Desch, H. E. 1 12, 101, 122, 280, 2 140, 143, 280, 321, 3 355
 — and Thomas, A. V. 2 300
 Desjardins, A. 4 241
 Deslauriers, T. 3 47

AUTHORS INDEX

- Desmond, R. C., *see* Jensen, V. S.
Deters, M. E. 2 242
Derwiler, S. B. 5 252
Deuber, C. G. 2 297, 4 89
— and Farrar, J. L. 1 260
Deubner, W. 5 65
Deventer, W. C. van 1 82
Dever, J. F. 4 39, 113, 114
Devoto, F. E. 4 89, 98
DeVries, W. 4 139
— and McDaniels, E. H. 4 139
Dey, A. C., *see* Budhirajia, K. L.
— *see* Ramaswami, S.
— *see* Varma, B. S.
Dhall, A. D. 1 180
Dhadeshwar, S. S. 1 125, 2 131, 3 22, 4 152
Dhawan, C. L., *see* Hoon, R. C.
Dick, A. T. 5 234
Dicker, G. H. L. 5 245
Dickerman, M. B., *see* Hall, R. T.
Dickerson, L. M. 4 64
Dickey, R. D., and Reuther, W. 2 237
Dickson, J. R. 5 60
Diebold, C. H. 1 20, 2 283, 4 151, 153
Dieterich, H., *see* Collins, D. L.
Dieterich, V. 1 205, 3 92, 4 65, 198
Dietrich, J., *see* Bäseler, W.
Dietz, A. G. H. 1 49, 5 115
— and Grinsfelder, H. 5 263
Dill, F. E., *see* Stevens, W. C.
Diller, J. D. 5 60
Diller, O. D. 4 39
— and Kellogg, L. F. 2 76, 162, 3 172
— *see* Adman, A. G.
Dillewijn, C. van 1 236, 4 17
Dillon, E. S., *see* Dillon, L. S.
Dillon, L. S., and Dillon, E. S. 4 22
Dilworth, J. R. 2 250
— *see* Larsen, J. A.
Dimond, A. E., Horsfall, J. G., Heuberger, J. W., and Stoddard, E. M. 4 125
Dinu, V. 1 56, 2 8
Dioszeghy, D. 4 120
Dixon, C. E. 1 283, 2 151
Dixon, H. H. 1 135, 5 13
Dixon, J. K., *see* Burns, M. M.
Dixon, L. B. 3 153
Djaparidze, L. I., and Vasilevskaya, L. M. 1 145
Doak, B. W. 1 135, 3 200
Doak, K. D., *see* Siggers, P. V.
Dobbs, C. G. 4 258
Döbele, E. 1 15
Dobrogaev, I. I. 2 12
Docters van Leeuwen, W. M. 2 123
Dodd, A. P. 3 160
Döderlein, R., *see* Friese, H.
Dodge, A. F., *see* Stevenson, H. A.
Dodge, A. W. 1 139, 5 280
Dodge, B. O. 5 203
Dodge, H. R. 1 251
Doffiné, E. 4 112
Doll, G. B., *see* Young, V. A.
Dologuin, F. C. 4 51
Dolukhanov, A. 2 198
Doman, L. S., *see* Bryan, J.
Domin, K. 3 114
Donahue, R. L. 1 304, 2 187, 5 88
— *see* Hopkins, H. T.
Donald, G. H. 1 48, 183, 2 315
Donehower, W., and Sacco, D. J. 4 243
Donnelly, M. 3 214
Donnelly, N. C. 2 54
Doorn, Z. van 3 356, 4 263
Doran, W. L. 3 201, 4 89, 156
—, Holdsworth, R. P., and Rhodes, A. D. 2 298
Dorizzi-Ryser, S. 3 143
Dorman, C. 5 69, 170
Dorman, K. W., *see* Mitchell, H. L.
— *see* Snow, A. G.
Dorne, M. 1 49
Dortignac, E. J., *see* Stoeckeler, J. H.
Doten, S. B. 5 132
Douda, V. 2 65
Douglas, A. H., *see* Lefebure, V.
Douglass, A. E. 3 55, 85, 173, 349, 4 63, 134, 137, 5 144
Dowden, P. B. 1 250, 2 159, 329, 3 346
—, Sellers, W. F., and Miller, F. E. 2 329
— *see* Furniss, R. L.
Downes, W., and Anderson, H. 3 254
Downs, A. A. 4 37, 228, 5 112
— *see* Barrett, L. I.
Doyle, J. 2 123
— *see* Looby, W. J.
Drake, G. L. 3 263
Draper, C. R. 3 233
Drees, E. M. 2 65, 3 44, 196, 4 95
Dreesen, W. H. 3 336
Drefahl, L. C., and Bescher, R. H. 1 286
Dreibelbis, F. R., and Post, F. A. 4 152
— *see* Kohnke, H.
Drexler, R. V. 4 95
Dreyfus, H. 5 122, 264
Drögsler, O. 5 48
Drychenko, M. M. 4 84
Dubakh, A. D. 4 215
Dubuar, J. F. 2 162
Ducasse, G. 2 23
Ducke, A. 1 249, 2 27, 127, 291, 3 37, 115, 116, 206, 4 21, 159, 5 113
Dudina, V. S. 1 142, 238
Dudley, L. P. 5 263
Duerr, W. A., Evans, T. C., and Morrill, G. E. 5 157
— and Gevorkiantz, S. R. 1 53, 2 205
— *see* Zon, R.
Duff, C. E. 1 290
Duffield, J. W. 3 38, 4 217
— and Snow, A. G. 2 116, 3 27, 110
— *see* Schreiner, E. J.
Dugal, L. C., *see* Bois, E.
Dugand, A. 3 332, 4 93, 97, 223, 5 243
Düggeli, M. 1 17
Dumbleton, L. J. 2 30, 3 346, 4 109
Dumpert, G., *see* Freudenberg, K.
Duncan, H. R., *et al.* 5 267
Duncan, R. D. 5 44
Duncan, W. H. 2 10, 3 37, 111, 4 18
— *see* Bishop, G. N.
Dundas, J. 4 199
Dundas, J. C. 4 162
Dunford, E. G., *see* Briegleb, P. A.
— *see* Niederhof, C. H.
Dunker, L. H. A. 4 46
Dunklee, D. E., *see* Midgley, A. R.
Dunkley, H. L. 1 122
Dunlap, A. A., and McDonnell, A. D. 1 87
Dunlap, M. E. 1 274
Dunn, L. 5 52
Dunn, P. M. 4 11, 259
Dunn, S. 3 77
Duque, J. 4 97, 101
Durant, C. L. 1 159, 2 27, 214, 325, 3 86, 124, 207
— *see* Watson, J. G.
Durgin, A. G., and Davis, E. M. 4 175
Durocher-Yvon, F., *see* Mamet, R.
Durrel, G. R. 1 92
Dutilloy, P. 1 98, 179
Dutt, A. T., Ghosh, S., and Chopra, Sir R. N. 5 131
Dwight, T. W. 5 229
Dwyer, J. D. 5 106
D'yachenko, A. E. 2 35
Dyer, R. A. 5 32
Dyksterhuis, E. J., *see* Bell, H. M.
EADES, H. W. 1 181, 2 227, 3 183
Eades, N. W., *see* Williams, G. J.
Eargle, D. H., *see* Ireland, H. A.
Eastwood, T. M. 5 266
Eaton, C. B. 3 253, 4 250
— and Hall, R. C. 5 67
— *see* Johnston, H. R.
Eaton, T. H. 4 152
— and Chandler, R. F. 4 214
Eberts, H. 1 122
Ebner, A. 2 55
Echeverria, I. 4 196, 5 103
Eckardt, T. 1 145
Eckbo, N. B. 2 313, 4 13, 5 75
Eckersley, A. M., *see* Dadswell, H. E.
Eckstein, K. 1 105, 153
Edgecombe, A. E. 3 223
Edginton, G., *see* Robinson, W. O.
Edick, G. L. 5 269
Edlin, H. L. 4 245
Edwards, C. A. 1 167
Edwards, D. C. 2 199
Edwards, E. J. K. 3 215
Edwards, J. H. 2 231
Edwards, M. V. 2 14
Edwards, W. H. 2 61
Efremova, G. I., *see* Federov, L. E.
Egging, W. J. 2 258, 279, 5 7
— and Harris, C. M. 1 84
Eggers, E. R. 5 253
Eggers, H. 2 30, 3 256
Egglar, W. A. 3 205
Egler, F. E. 1 147, 2 125, 3 212, 4 18, 20, 5 133, 238
Egner, K. 2 59, 3 147, 5 120
— and Sinn, H. 4 240
— *see* Graf, O.
Ehrhart, E. O. 1 266, 2 130, 162, 333, 3 357, 4 63

AUTHORS INDEX

Ehrlich, J. 1 241, 5 137, 281
 — and Opie, R. S. 2 120
 — see Benton, V. L.
 — see Bingham, R. T.
 — see Southam, C. M.
 Eiche, V. 4 18
 Eickner, H. W. 5 263
 Eide, E. 1 197, 5 68
 — and Langsaeter, A. 4 104, 5 67
 Eidmann, F. E. 1 35
 Eidmann, H. 5 174
 Eig, A., and Feinbrun, N. 5 100
 Eilertsen, L. W. 4 244, 5 262
 Eisenhuth, F., see Lehmann, E.
 Eisler, H. P. 1 166
 Eisspeissis, J. L. d' 2 256, 3 48, 232
 Ekambaram, T., and Kamalam, V. K. 3 199
 Ekdahl, I. 3 290
 Eklund, B. 5 206
 Eklundh, C. 5 95
 — see Johnson, H.
 Ekstrand, H. 5 58, 124
 Elchibegoff, I. M. 3 101
 Elder, N. L. 3 301
 Eldridge, I. F. 2 183, 4 65
 — see Cruikshank, J. W.
 — see Lehrbas, M. M.
 — see Spillers, A. R.
 — see Winters, R. K.
 Eldridge, S., *et al.* 5 147
 Eliason, E. J. 1 263, 2 37, 41
 — and Heit, C. E. 2 37, 132, 3 302, 4 26
 — see Littlefield, E. W.
 Eliescu, G. 1 154
 Elliot, C. S. 1 47
 Elliott, N. R. 5 29
 Elliott, R. 3 338
 Ellis, B. R. 3 307
 Ellis, D. E. 2 18
 Ellis, D. J., see Dadswell, H. E.
 Ellis, G. H., see Parks, R. Q.
 Ellis, M. 2 186
 Ellis, M. H. 3 152
 Ellis, R. P., see Harrar, J. G.
 Ellison, L. 4 199, 261, 5 235
 Elmendorf, A. 4 112
 — and Lief, M. 3 318
 Elmer, L. A. 5 190
 Elwell, H. M. 5 89
 —, Daniel, H. A., and Fenton, F. A. 3 352
 Ely, R. T., and Wehrwein, G. S. 2 261
 Emden, F. I. van 1 250, 3 117, 4 224, 5 245
 Emmer, R. E. 3 349
 — and Cramer, J. R. 3 349
 —, Kuenzel, J. G., and Kellogg, L. F. 4 63
 — and Schramm, W. O. 3 349
 — see Kellogg, L. F.
 Emmett, J. A. 5 51
 Enander, M. 3 69
 — and Heijbel, I. 1 256
 Ende, E. von, and Geffcken, H. 3 317
 Enders, C., and Kärbach, K. 1 101
 Ene, I.-M. 5 244
 Engel, A. 1 75

Engel, H. 1 154, 4 251
 Engelhardt, R., and Heuck, C. 3 326
 Engler, K. see Freudenberg, K.
 Englerth, G. H. 4 247
 — see Buchanan, T. S.
 Engstrom, H. E., and Matthew, L. S. 4 186
 — and Stoeckeler, J. H. 3 214
 Enkola, K. 5 172
 Enström, A. F. 2 318
 Enzie, J. V. 5 30
 Epling, C., and Lewis, H. 4 93
 — and Robinson, W. 2 290
 Erdtman, H. 4 34, 109, 5 258
 Erickson, A. G., see Geddes, J. G.
 Erickson, H. D. 1 275
 — and Rees, L. W. 2 225
 —, Schmitz, H., and Gortner, R. A. 1 41
 Erickson, T. 2 9
 Eriksson, J. 3 233
 Erbe, C. 3 193
 Erler, E. 1 297
 Ernest, E. C. M., and Pettifor, C. B. 1 96
 Ernst, M. L. 2 153
 Erteld, W. 4 162
 Esau, K. 1 144, 5 97
 Escherich, K. 2 22
 Escherich, K. L. 1 104
 Escobar, R. 5 33
 Escobar, L. L. 5 173
 Esourron, R. 1 179
 Espinosa, M. R. 5 22
 Esser, H. 4 237
 Essig, E. O. 4 160, 5 203
 Estillore, F. E. 2 211
 Etridge, J. J., see Lefebvre, V.
 Etter, H. 4 218
 Eubanks, W. B. 5 59
 Evans, F. C. 4 224
 Evans, G. C. 1 146
 Evans, J. W. 2 74, 4 116
 Evans, T. C. 5 157
 — see Duerr, W. A.
 — see Lotti, T.
 Evans, T. H., see West, E.
 Evans, T. H., see West, E.
 Evenari, M. (Schwarz, W.) and Konis, E. 1 136
 —, Schwarz, W., Konis, E., and Zirkin, D. 1 260
 Evenden, J. C. 2 287
 — and Gibson, A. L. 2 22
 Everley, H. E. 2 300
 Evers, R. A. 4 219
 Everts, A. B. 2 71
 Exell, A. W. 1 151
 Eyles, D. E. 3 295
 Eyre, F. H. 1 32, 253
 — and Neetzel, J. R. 2 33
 — see LeBarron, R. K.
 Eyster, H. C. 5 91
 Ezekiel, W. N., and Nelson, C. 3 342
 Ezell, A. I., see Friedman, L.

FABRICIUS, L. 1 34, 77, 3 104, 153, 212, 331, 4 124
 Faagri, K. 3 296
 Fagerlund, G. O., see Baldwin, P. H.

Fahnestock, G. R., and Wellner, C. A. 2 43
 Fahringer, J. 4 133
 Fairbairn, W. A. 2 25, 3 113, 160, 289, 5 253
 Fairchild, F. R. 2 82
 Falck, R. 1 274
 Fallenius, B., and Johansson, F. 4 199
 Fankhauser, F. 5 287
 Fanti, M. 5 134
 Farber, E. 5 258
 Farina, R. L. J. 5 41, 262
 Farquharson, R. A. 3 147
 Farr, W. K. 2 141
 Farrar, J. L. 1 260
 — and Grace, N. H. 2 213, 3 25, 4 16, 156
 —, Grace, N. H., and Hopkins, J. W. 2 298
 — see Deuber, C. G.
 Farrar, M. D. 2 161
 — see Flint, W. P.
 Farrell, B. 5 212
 Farrell, F. J., see Linekin, M. G.
 Farrow, E. P. 3 293
 Farsky, O., see Kratochvil, J.
 Fasolo, U. 1 272
 Fassett, N. C. 5 171
 Fauconau, L. 4 182
 Faulks, E. B., and Spillers, A. R. 1 224
 Fauteux, J.-N. 2 181
 Fawcett, G. L. 4 250
 Fawcett, H. S., and Rhoads, A. S. 1 241
 Fearon, B. H., see Linekin, M. G. 5
 Featherly, H. E. 4 53, 55
 Federov, L. E., Ivakin, I. A., and Efremova, G. I. 5 50
 Fedorov, A. A., see Yakimov, P. A.
 Fegel, A. C. 3 309
 Fehér, D. 3 135, 5 246
 Feinbrun, N., see Eig, A.
 Fejér, G. 4 245, 5 41
 Fekete, Z. 1 32, 54
 Fellows, E. S. 2 67, 5 75
 — see Prince, J. B.
 Felt, E. P. 2 286, 327, 3 250, 4 133, 168, 5 66, 197, 254
 — and Bromley, S. W. 3 81, 4 60, 133, 253, 5 203
 Fenaroli, L. 1 146
 Fenner, C. 5 286
 Fenton, E. W. 4 18
 Fenton, F. A. 2 161, 3 170
 — see Elwell, H. M.
 Fenwick, A. R. 2 309
 Ferdinandsen, C., and Jørgensen, C. A. 2 86
 Ferguson, J. H. A., and Hellinga, G. 3 258
 Fergusson, J. A. 1 181
 Fergusson, J. L. F. 4 59
 Fernald, M. L. 5 19
 Fernandes, D. A. 2 318
 Fernandes, C. S. 5 113
 Fernholz, D. L., and Potter, G. F. 4 245
 Ferrari, P. V. 3 234
 Ferree, M. J., see Ostrom, C. E.

AUTHORS INDEX

- Fessel, F. 3 147
 — see Schlüter, R.
 Feuerstein, A. 4 10
 Feytaud, J. 2 311
 Fiedler, E. L., see Billington, P. S.
 Field, J. F. 2 34
 Field, R. H. 2 78
 Fielding, J. M. 2 205
 — and Millett, M. R. O. 4 24
 Fienzet, L., see Bleton, C. A.
 Filipovici, I. 3 125
 Findlay, W. P. K. 1 43, 47, 175, 241,
 252, 228, 303, 353, 139, 441, 538
 — and Pettifor, C. B. 1 277, 3 222
 — see Birkinshaw, J. H.
 — see Cartwright, K. St. G.
 Finlay, R. H. 3 62, 4 238, 264
 Finlayson, L. R. 2 202
 Finlayson, M. 5 263
 Finn, R. F. 4 150, 151
 — and Tryon, H. H. 2 185, 4 151,
 167, 168
 Fischer, C. E. C. 4 149, 2 26, 3 35
 Fischer, F. 4 226
 Fischer, H. 1 190, 4 103
 Fischnich, O. 1 134
 Fisher, E. G., see Sell, H. M.
 Fisher, G. M. 5 92
 Fisher, H. J. 2 73
 Fisher, J. H., Hawkins, W. L., and
 Hibbert, H. 2 302
 Fisher, P. L. 3 246
 — see Turrell, F. M.
 Fisher, R. A., and Yates, F. 5 155
 Fisher, R. C. 1 189, 2 304, 3 223,
 4 171, 194, 5 285
 — and Tasker, H. S. 2 52
 Fisher, W. S. 2 291
 Fitzgerald, F. M., see Alfred, C. E.
 Fitzgerald, T. J. 4 12
 Fitzherbert, J. T. 2 321
 Fitzwater, J. A., and Phillips, G. R.
 5 214
 Fivaz, A. E. 5 214
 Flanagan, G. C., see Brandstrom,
 A. J. F.
 Flanders, S. E. 3 255, 5 107
 Flannery, R. D. 4 151
 Flatt, F. L. 3 240, 316
 Fleming, G. 1 168
 Fleming, H. S., see Brown, A. W. A.
 Flemion, F. 3 125
 — see Baldwin, H. I.
 Flemmich, C. O. 1 20, 2 83
 Flenner, A. L., and Kaufert, F. H.
 4 117
 Flensburg, C. E. 1 163
 Fletcher, K. M. 4 52
 Fletcher, W. F. 5 23
 Flint, W. P., and Farrar, M. D. 3
 171, 5 285
 — see Chandler, S. C.
 Floderus, B. 3 37, 5 21
 Flodman, B. 3 140, 5 253
 Florescu, I. 2 278
 Flory, W. S., and Brison, F. R.
 4 217
 Flück, E. 5 232
 Fluiter, H. J. de 4 193
 Fluke, C. L., see Chamberlin, T. R.
 Flurry, J. E. 5 121
 Fluylt, P. C. M. 3 356
 Fogh, I. F. 5 143
 Földváry, L. 3 353; 4 12
 Folkers, K., and Koniuszy, F. 3 23
 — and Unna, K. 3 23
 Fons, W. L. 2 113, 280
 — see Buck, C. C.
 — see Curry, J. R.
 Forbes, A. C. 3 302, 303
 Forbes, A. P. S. 2 237
 Forbes, E. B., see Wainio, W. W.
 Forbes, R. D. 3 91
 — and Beck, C. W. 4 139
 — and Mesavage, C. 5 291
 — see Hough, A. F.
 Ford-Robertson, F. C. 2 319
 Forgách, B. 1 258
 Fors, A. J. 3 128, 5 173
 Forsberg, J. L. 4 127
 Forsling, C. L. 4 66, 5 72, 73
 Forslund, K.-H. 2 195, 5 173, 201
 Fosberg, F. R. 3 115
 — see St. John, H.
 Foster, A. S. 5 97
 Foster, F. W. 2 81
 Foster, G. A., and Gargatagli, F. 2
 66
 Foster, J. E., see Biswell, H. H.
 Fotidar, M. R. 4 184
 Fougare, J. 2 16, 44
 — see Demortier, G.
 Foulon, A. 2 59
 Fourcroy, M. 4 17
 Fourman, K. L. 2 12
 Fowells, H. A. 2 196, 3 209, 5 164
 — and Arnold, R. K. 1 262
 Fowler, W. F., and Harlow, W. M.
 2 46
 — see Coppick, S.
 Fox, D. E., see Lawson, F. R.
 Fox, E. C. 4 138
 Fox, G. D., and Kruse, G. W. 1 193
 Fox-Wilson, G. 5 107
 Foxworthy, F. 1 151
 Føyn, P. 1 259
 Fracker, S. B. 5 60
 Frahm, E. D. G. 4 51
 Frahm, E. E., see May, W. D.
 Frahm-Leliveld, J. A. 3 283
 Francis, E. H., see Whitten, R. R.
 Francis, S. 4 173
 Francis, W. D. 1 151, 3 32
 Francke, A. 1 135
 Francke, C., and Whistling, F. 4 157
 Franco, F. 3 89
 François, E. 2 159
 François, T. 1 45, 150, 2 76
 Frank, A. 1 249
 Frank, B. 3 22
 Franklin, G. L., see Rendle, B. J.
 Franklin, J. N., see Calnan, E. J.
 Fransén, J. J. 1 105, 2 21, 75
 Franz, J. 3 165, 4 130
 Fraser, G. K. 3 34
 — see Muir, A.
 Fraser, L., and Vickery, J. W. 1 149
 Fraser, W. P. 5 105
 Freas, A. D., see Markwardt, L. J.
 Freed, E., see Goldfinger, A.
 Freeman, H. 1 46
 Freeman, O. M. 3 28
 Freeman, R. D., and Peterson, F. C.
 4 34
 — see Young, A. E.
 Freeman, R. W. T. 2 279
 Freeman, T. N. 4 251
 French, O. C. 5 283
 Freudenberg, K., Lautsch, W., and
 Engler, K. 2 302
 —, Lautsch, W., and Piazzolo, G. 4
 233
 —, Ploetz, T., and Dumpert, G. 3
 311
 Frey, R. W., and Clarke, I. D. 4 49
 — see Clarke, I. D.
 Frey, U. 3 155, 4 123
 Freyfeld, E. E. 1 277
 Frey-Wyssling, A. 1 44, 2 48, 3 133,
 135, 4 31, 34, 172
 — and Aeberli, H. 4 231
 — see Pfenniger, L.
 Frezzi, M. J. 3 74, 5 61
 Frick, J. 5 240
 Frick, L., see Leibundgut, H.
 Friedlander, C. J. 2 148
 Friedman, L., and Ezell, A. I. 4 183,
 5 51
 Friedrich, K. 1 97, 99, 3 319
 Friend, R. B. 5 62
 — see Spurr, S. H.
 Friend, W. H. 3 257
 Fries, N. 4 85, 150, 5 91
 Fries, R. E. 3 294
 Friesse, F. W. 1 78, 84, 147
 Friesse, H. 5 121
 — Clotofski, E., and Döderlein, R.
 1 145
 Friesner, G. M., see Friesner, R. C.
 Friesner, R. C. 3 209, 5 14, 67, 92
 — and Friesner, G. M. 3 260
 — see Potzger, J. E.
 Fritsch, A. 4 93
 Fritz, C. W., and Atwell, E. A. 4 109
 Fritz, E. 1 165, 193, 2 184, 3 15,
 86, 179, 210, 4 10, 5 71
 Fritzsche, G., see Geiger, R.
 Fröhlich, J. 1 155, 3 100, 122, 176,
 4 98
 Frolik, A. L. 3 31
 Frost, B. M., see Awalt, F. H.
 Frost, S. W. 4 159
 Frothingham, E. H. 3 193, 4 104,
 5 176
 Fruchtenicht and Hennig 2 80
 Frye, W. M. 5 19
 Fryer, H. 2 2 59
 Fukuda, Y. 1 285
 Fukuyama, G., and Hanzawa, M.
 2 238
 Fulling, E. H. 3 68, 5 276
 Fulmek, L. 5 200
 Funicello, L. 1 73
 Funke, F. W. 2 71, 156, 243, 3 244
 Funke, I. C., see Curry, J. R.
 — see Hanson, P. D.
 Funkhouser, W. D. 5 246
 Furer-Haimendorf, C. von 5 148
 Furniss, R. L. 1 177, 3 345, 5 201
 — and Dowden, P. B. 3 345
 — see Kimmey, J. W.
 GÄBER, E. 4, 108, 170, 244

AUTHORS INDEX

- Gäbler, H. 2 23, 30, 330, 3 171, 206, 344, 4 129, 5 63
Gagarin, E. 4 13, 82
Gagnepain, F. 2 27
Gahnback, J. 4 123
Gaiser, R. N., *see* Coile, T. S.
Galbraith, A. V. 1 188, 2 9
Galeriu, I. 2 334
Gallagher, P. H. 5 87
Gallant, M. N. 1 58
Gallardo, A. C., *see* Varian, H. F.
Gallay, Ya. S. 3 51
Galloway, H. M. 2 187
— *see* Wilde, S. A.
Gambrell, F. L. 3 84, 4 251
Gamer, C. H., *see* Othmer, D. F.
Gams, H. 4 86
Gants, G. B. 3 285
Garcia, L. A. A. 1 239, 2 19
Gardiner, R. 4 227
Gardiner, R. S. 3 91
Gardner, F. E., *see* Marth, P. C.
Gardner, H. A., *see* Klund, H. S.
Gardner, H. M. 4 200
Gardner, J. C. 1 195
Gardner, J. C. M. 1 28, 250, 2 292, 3 38, 295, 4 22, 5 25, 107, 203
Gardner, R. C. B. 2 118
Garfitt, J. E. 3 292
Gargatagli, F., *see* Foster, G. A.
Garin, G. I. 4 92
Garland, E. A. 2 82, 5 70
Garland, H. 1 174, 2 183
— and Marion, L. 4 182
Garren, K. H. 1 95, 3 73, 5 239
— *see* Heptings, G. H.
Garrett, H. 2 237
Garrett, S. D. 1 84
Garthwaite, P. F. 1 191, 3 313
— and Desai, M. H. 2 28
Gartner, G., *see* Krauss, F.
Garver, H. L., and May, P. G. 4 235
Garver, R. D. 1 73, 4 138
Garwood, G. T. 2 154
Gates, F. C. 4 157
Gates, R. R. 4 90
Gates, W. H. 4 220
Gathy, H. 2 82
Gaufin, A. R., *see* Rees, D. M.
Gäumann, E. 1 139, 2 144, 5 278
Gaussen, H. 1 26, 2 8, 27
Gautheret, R., *see* Plantefol, L.
Gavrilov, K. I. 2 283
Gavris, V. P. 1 138
Gavris, Yu. A., and Kekukh, A. M. 3 67
Gazin, C. J. 2 111
Gearhart, H. E., *see* Steavenson, H. A.
Geddes, J. G., and Erickson, A. G. 1 167
Gee, G., *see* Tristram, G. R.
Geery, E. 4 172
Geete, E. 2 131, 3 17, 222, 5 198
Geffcken, H., *see* Ende, E. von
Gehlsen, C. A. 5 249
Geiger, F. 5 35
Geiger, R. 1 126, 4 13
— and Fritzsche, G. 3 43
Geisthardt, G. 1 152
Gelinsky, H. 1 100
Gelinsky, H., *see* Mayer-Wegelin, H.
Gemignani, E. V., and Rodríguez, R. 3 224
Gemmer, E. W. 3 123
—, Maki, T. E., and Chapman, R. A. 2 33
Genaux, C. M., and Kuenzel, J. G. 2 53
Généau, G. 1 123
Genest, M.-E. 4 59
George, E. J. 1 269, 5 255
Georgescu, C. C. 3 203, 292, 4 18
Gerdien, H., and Jubitz, W. 3 327
Gérin, M. 4 111
Gerling, J., *see* Milne, M. A.
Germise, F. D., *see* Mendoza, D. R.
Gersdorf, E. 4 255
Gerth, H. 2 115
Gese, E. C., and Shadle, A. R. 5 179
Gevorkiantz, S. R. 1 298, 2 163
— and Duerr, W. A., 1 53, 2 250
— and Ochsner, H. E. 5 143
—, Rudolf, P. O., and Zehngraff, P. J. 5 108
— and Zehngraff, P. J. 5 143
— *see* Girard, J. W.
— *see* Macon, J. W.
Gewecke, H. 3 146
Ghelmeziu, N. 1 42
Ghesquière, J. 1 247
Ghillini, C. A. 1 141
Ghose, T. P. 4 183, 5 55
— and Krishna, S. 5 54, 2 194
— and Varma, B. S. 3 332, 4 122
Ghosh, A. K. 3 191
Ghosh, S., *see* Dutt, A. T.
— *see* Lahiri, J. K.
Ghosh, S. S. 5 181
Giacobbi, A. L., and Alfonsi, J. L. 3 292
Gibbons, W. H., *see* Marsh, R. E.
Gibbs, J. A. 2 283
— and Ligon, W. S. 4 166
Gibbs, F. J., *see* Phillips, G. R.
Gibbs, R. D. 2 17, 49, 4 154
Gibson, A. J. 3 230, 5 46
Gibson, A. L. 5 201
— *see* Evenden, J. C.
Giddings, J. L. 3 85, 4 258, 5 206
Giese, H., 5 269
Gieysztor, M., and Pawlowicz, J. 1 190
Gifford, J. C. 5 292
Gilbert, S. G. 2 300
Giles, W. L., *see* Stoutemyer, V. T.
Gill, C. B. 1 125
Gill, L. S., and Andrews, S. R. 4 55
— *see* Andrews, S. R.
Gillett, C. A. 1 109, 4 139
Gillett, J. B. 3 291
Gillham, R. B. 3 333
Gilly, C. L. 4 158, 222, 5 21, 104, 106
— *see* Camp, W. H.
Gilman, J. C., and McNew, G. L. 2 119
Gilormini, J. A. 1 263
Giordani, M., and Leone, P. 5 128
Giordano, G. 1 150, 248, 2 26, 126
Girão, A. de A. 5 22
Girard, J. W., and Gevorkiantz, S. R. 2 249
Girard, J. W., *see* Briegleb, P. A.
Girchits, A. L., *see* Sharkov, V. I.
Girton, R. E., and Park, E. R. 5 13
Gisborne, H. T. 1 227, 2 242, 3 242, 4 124, 187, 211, 5 136, 230
Glading, R. E. 3 52
Gläser, H. 1 122
— and Natlacen, F. 3 315
Glazoff, S. de, and Kolachov, P. J. 5 271
Glendening, G. E., *see* Cassady, J. T.
Glesinger, E. 4 67
Glock, W. S. 3 350
— and Reed, E. L. 2 46
— and Studhalter, R. A. 2 245, 4 53
— *see* Sampson, A. W.
Gløersen, F. 3 292
Glømme, H. 1 129
Glover, H. M. 5 13
Glover, P. E. 3 32
Glover, V. L. 2 232
Glück, A., *see* Prütz, L.
Glücklich, E. 4 117
Gobeil, A. R. 1 152, 2 329, 3 81, 165, 252, 4 22, 5 63, 107
Gobeil, R. 4 65
Godard, H. P., McCarthy, J. L., and Hibbert, H. 2 143
Godbole, N. N., Gunde, B. G., and Srivastava, P. D. 4 122
Goddard, D. R., *see* Goodwin, R. H.
Goddard, M. K., *see* Bramble, W. C.
Godden, F. W. 3 245
Godfrey, E. W. 2 68
Godwin, D. P. 3 73
Godwin, G. 1 32, 3 265, 316, 5 50, 112
Godwin, H. 3 96, 4 11, 5 8, 105, 230
— and Tansley, A. G. 3 15
Goedert, P. 1 15
Goidänich, G. 1 241
— and Azzaroli, F. 2 73
— and Vivani, W. 1 241
Coin, F. L., *see* Kobe, K. A.
Göksin, A. 4 102
Goland, M., and Aleck, B. 5 120
Goldfinger, A., and Freed, E. 4 123
Golding, F. D. 2 127, 4 184
Goldschmidt, T. 5 262
Goldschmidt, W. B., *see* Stephens, R. P.
Golightly, H. H. 3 148, 149
Gollop, G. E. 5 267
Gombault, R., *see* Camus, A.
Gomes, A. 4 186
Gomme, E. D. 5 135, 136
Gonçalves Carneiro, J. 4 183
Gonçalves Da Cunha, A., and Gonçalves Sobrinho, L. 3 203
Gonçalves Sobrinho, L., *see* Gonçalves Da Cunha, A.
Gonda, D. 4 38
Gonda, P. 3 280
Gonggrijp, L. 1 106, 3 197, 287
Gonggrijp, J. W., *see* Rowaan, P. A.
Gonzales, C., *see* Marañon, J.
Gottlieb, O., *see* Stather, F.
Gottschald, R., *see* Sachsenberg, E.
Gottschalk, F. W. 4 240
— *see* Andrews, L. K.
Götz 1 82

AUTHORS INDEX

- Gould, J. J. 3 240
 Goulet, E. R. 1 281
 Goutheret, R. 5 15
 Gouwentak, C. A., and Maas, A. L. 2 15
 Govers, A., *see* Bottenburg, M. van
 Gowen, G. M. 3 242
 Grabherr, W. 3 284
 Grace, N. H. 1 136, 261, 2 40, 212, 297, 3 108
 — and Farrar, J. L. 2 213, 3 25, 4 16, 156
 —, Farrar, J. L., and Hopkins, J. W. 2 298
 — and Thistle, M. W. 2 135
 — *see* Oliver, R. W.
 Grachev, I. D., and Kovalenko, A. G. 3 63, 5 258
 Gračinin, M. 1 129
 Graf, O. 3 134, 4 34, 5 196
 — and Egner, K. 3 135
 Graff, J. H. 5 264
 — and Miller, R. W. 1 273
 Graham, R. M. 5 213
 Graham, S. A. 1 152, 201, 3 114, 251, 4 95
 — and Orr, L. W. 3 82
 Graiff, G. L. 5 118
 Gralen, N., *see* Holmberg, B.
 Gram, K., Muhle-Larsen, C., Larsen, C. S., and Westergaard, M. 4 16
 Granger, R., *see* Mousseron, M.
 Granovsky, A. A. 1 251
 Grant, J. 1 207, 4 114, 175, 185
 Grant, T. J. 3 88
 — and Childs, T. W. 2 326
 — Stout, D. C., and Readey, J. C. 4 58
 Grantham, J. B. 5 75
 Graser, H. 3 352
 Grasovsky, A. J. 2 334
 Grassman, W., and Kuntara, W. 4 49
 Graumann 3 157, 335
 Gravatt, A. R., Latham, D. H., Jackson, L. W. R., Young, G. Y., and Davis, W. C. 2 288
 Gravatt, G. F., *see* Martin, J. F.
 Graves, A. H. 3 77, 4 16, 5 16, 61
 Graves, H. S. 5 148
 Graves, P. F. 4 65
 Gray, E. 3 163
 Gray, G. C. R. 2 253
 Gray, H. R. 1 56, 227, 2 79, 5 286
 Gray, L. G., *see* Curry, J. R.
 Grayson, J. M. 5 203
 Green, F. J. 4 211
 Green, T. U. 2 202
 Greene, S. W., *see* Wahlenberg, W. G.
 Greenhill, M. E. 4 172
 Greenhill, W. L. 1 94, 2 48, 220, 310, 4 38, 5 180
 — and Dadswell, H. E. 2 49
 — *see* Wright, G. W.
 Greenhouse, S. 3 218
 Greenwald, H. P., *see* Maize, E. R.
 Greenway, P. J. 3 14, 66, 237, 238, 4 122, 243
 — *see* Hora, F. B.
 Greenwood, M. 5 134
 Grefnes, M. W. 3 193
 Gregory, C. E. 4 174
 Gregory, J. N. 3 55, 5 46
 — *see* Wilson, H. B.
 Gregory, L. E. 2 155
 Gregson, F. 3 63, 5 293
 Greiss, E. A. M. 1 93
 Griffioen, K. 1 145
 Griffith, A. L. 1 13, 37, 38, 2 42, 208, 3 74, 4 100, 166, 5 177, 179
 — and Budhiraja, K. L. 5 195
 — *see* Laurie, M. V.
 — *see* Rangaswami, Rao Sahib S.
 Griffith, B. G. 2 135
 Griffith, J. R. 4 211
 Griggs, R. F. 4 218
 Grin, F. O. 4 93
 Grinsfelder, H., *see* Dietz, A. G. H.
 Griswold, C. L. 1 239
 Griswold, F. S., *see* Lutz, H. J.
 Gritsenko, I. F. 2 280
 Grobety, W. 3 64
 Grodinsky, L., and Jenkins, A. E. 5 138, 279
 — *see* Jenkins, A. E.
 Grogan, R. G., *see* Worley, C. L.
 Grogan, W. W., *see* Price, W. H.
 Gron, A. H. 1 107, 123, 5 254, 290
 Grondal, B. L. 5 55
 — and Mottet, A. L. 5 34
 — and Schrader, O. H. 5 182
 Grosjean, J. 5 60
 Gross, H. N., *see* Miller, P. W.
 Gross, S. T., Clark, G. L., and Ritter, G. J. 2 47
 Grossfeld, J. 5 234
 Grossman, H., Krebs, E., Ritzler, K., and Weisz, L. 1 200
 Grossman, S. J. 3 198
 Grover, F. O. 5 22
 Groves, J. W. 1 149, 3 341
 Gruenewald, F. A. 1 225, 2 184
 Gruenhagen, R. H. 2 210
 — *see* Riker, A. J.
 Grumbles, T. L. 3 220
 Grünberg, I. P. 3 181
 Grünwoldt, F. 1 53
 Gruschow, G. F. 2 191
 Grush, F. J. 5 36
 Gryse, J. J. de 3 82, 5 71, 201
 Guard, A. T. 5 28
 — and Wean, R. E. 2 295, 3 124, 302
 Guba, E. F. 4 128
 Gudden, F., 1 161
 Guennard, R. G. M. 5 269
 Guenther, E. 5 53, 132, 271
 Guernsey, F. W., *see* Jenkins, J. H.
 Guerreros, J. A. 5 106, 249
 Guha, P. C., and Roy, A. N. 4 50
 Guillaume, P. 1 100
 Guillaumin, A. 2 27
 Guillebaud, W. H. 1 39, 5 49
 Guillemonat, A., and Traynard, P. 5 258
 Guizazü, J. R., *see* Arena, A.
 Guinier, P. 1 14, 98
 Guinot, H. M. 5 50
 Guise, C. H. 1 308
 — *see* Gustafson, A. F.
 Guislain, A. 1 54
 Gulisashvili, V. Z. 3 19
 Gulwadi, S. V. 5 28
 Gumz, W. 5 55
 Gunckel, J. E. 5 97
 Gunde, B. G., *see* Godbole, N. N.
 Gundersen, A. 5 104
 Gunn, A. L. 2 307
 Gunn, G. 4 239, 5 125
 Gunther, A. E. 5 18
 Gunton, H. C. 2 180, 3 14, 4 24, 211
 Gurcki, A. V. 1 144, 164, 3 112
 Gurvich, B. R. 4 93
 Gusev, V. I., and Rimski-Korsakov, M. N. 4 192
 Gustafson, A. F. 3 102, 5 163, 207
 —, Ries, H., Guise, C. H., and Hamilton, W. J. 1 307
 Gustafson, F. G. 4 217, 5 25
 Gustafsson, C. 4 115
 Gustavson, K. H. 4 115
 Gut, R. C. 1 21, 234, 254, 3 43
 Guthrie, J. D. 3 299
 Guyot, H. 2 201
 Györfi, J. 2 28, 3 257, 5 63
 Gysel, L. W. 5 88
 HAAKH 2 323
 Haas, H. 5 259
 Habelska, H., *see* Rayss, T.
 Haberler, E. 4 147, 5 229
 Hachihama, Y., Zyodai, S., and Umez, M. 2 303
 Hachinoë, S., *see* Shikata, M.
 Haddow, W. R. 1 85, 4 20, 59
 — and Adamson, M. A. 1 143
 — and Newman, F. S. 4 126
 Hadorn, C. 3 182
 Haegermark, Y. R. 4 119
 Hafeez-ud-Din, Khan Sahib 1 247
 Haffner, L. C., and Kobe, K. A. 2 226, 3 230,
 5 231
 Hafner, F. 3 57, 95, 227, 4 37, 83,
 5 231
 Hagberg, E. 5 214
 Hagberg, N. 1 52, 192, 193, 5, 204
 Hagen, V. W. von 5 55
 Hagenstein, W. D. 3 301, 5 145
 Häger, B. 3 144, 322
 Hagfors, E. A. M. 5 289
 Haggander, G. A. 3 324
 Hägglund, E. 1 97, 307, 2 150, 3 151,
 4 114, 5 45
 — and Bergeck, T. 5 121
 — and Larson, R. 4 34
 Hagley, W. H. 2 9
 Hahn, G. G. 2 120, 194, 3 76, 338,
 5 199
 — and Ayers, T. T. 5 199
 Haig, I. T., Davis, K. P., and Weidman, R. H. 3 121
 Haigh, J. C. 2 66, 3 289
 Hakimuddin, M. 2 334
 Hain, G. G. 1 240
 Haines, W. B. 5 26
 Hale, J. D. 3 308, 5 257
 — and Prince, J. B. 2 142
 Hale, J. M., and Halversen, W. V. 3 20
 Hale, W. F. 1 199, 3 244
 Halfert, E., *see* Janson, E.
 Hall, D. G. 2 128

AUTHORS INDEX

- Hall, J. A. 1 179, 2 332
— *see* Hallauer, F. J.
Hall, J. S. 5 207
Hall, L. C. 3 154
Hall, P. E. 3 150
Hall, R. C., *see* Eaton, C. B.
Hall, R. T., and Dickerman, M. B. 5 185
Hall, S. J. 1 184
Hall, T. F., and Penfound, W. T. 1 148, 246, 5 102
Hall, W. 2 78
Hall, W. L. 1 164
Hall, W. T. 2 207
Hallander, A. 2 56
Hallauer, F. J. 1 102
Hallauer, F. J. 5 157
—, Hall, J. A., Brown, F. L., Curran, C. E., and Baird, P. K. 4 82
Haller, H. L., *see* La Forge, F. B.
— *see* Schechter, M. S.
Halliday, W. E. D. 1 24
— and Brown, A. W. A. 5 168
Halling, W. [E.] 3 172, 5 205
— *see* Person, H. L.
Halter, E. T. 5 253
Halversen, W. V., *see* Hale, J. M.
Hamilton, C. C. 3 81, 257, 4 192, 193, 251, 5 202
Hamilton, J. M., Palmer, D. H., and Mack, G. L. 5 198
— *see* Horsfall, J. G.
Hamilton, S. W. 5 29
Hamilton, W. J. 3 295
— and Cook, D. B. 2 128
— *see* Gustafson, A. F.
Hammar, C. H. 1 109, 2 82
— and Mussman, A. H. 2 82
Hammarstrand, E. 3 263
Hammatt, R. F. 1 199, 4 198
Hampel, R. 2 76
Handley, W. R. C. 1 235
Hanley, J. H. 2 134
Hanley, W. W. 2 152
Hansbrough, J. R., *see* Scheffer, T. C.
— *see* Spaulding, P.
Hansen, E. 5 234
Hansen, G. M. 2 146
Hansen, H. L., and Schmitz, H. 1 269
Hansen, H. P. 1 224, 2 109, 3 15, 33, 97, 174, 191, 4 11, 82, 5 9, 156, 231
— and Mackin, J. H. 2 182
Hansen, K. 1 155
Hansen, R., *see* Wellner, C. A.
Hanson, E. A. 3 159
Hanson, H. S. 2 74, 329, 5 202
Hanson, P. D. 1 103
— and Abell, C. A. 3 245
—, Funke, I. C., and Turner, E. L. 2 325
— *see* Show, S. B.
Hanzawa, M., *see* Fukuyama, G.
Hanzlik, E. J. 2 206
Hao, K. S. 1 87
Haracsi, L. 4 249
Haralamb, A. 3 292
Haders-Steinhäuser, M., *see* Jayme, J.
Harding, J. H. 2 76, 210
— *see* Stoaite, T. N.
Harding, R. E. 2 112
Härdtl, H. 1 23, 3 348
Hardy, D. E. 4 193
Hardy, E. 2 231, 4 116, 174, 233, 5 124
Hardy, F. 1 79, 2 115, 187, 4 88
Hardy, G. A. 5 65
Hardy, J. E. 1 190
Haring, C. T. 4 105
Harkness, H. W. 1 230
Harkom, J. F. 2 63, 3 326, 4 178, 5 262
—, Colleary, M. J., and Sedziak, H. 4 117
— *see* Moore, G. E.
Harley, J. L. 2 11, 113
Harlow, C. M. 1 196
Harlow, W. M. 1 276, 2 301, 4 94, 5 113
— and Harrar, E. S. 3 203
— *see* Fowler, W. F.
Harms, H. 1 151, 5 173
Harper, F. B. 2 332
Harper, H. J. 3 298
Harper, R. M. 4 223
Harrar, E. S. 2 201, 3 310, 4 108, 170
— and Reid, D. G. 4 117
— *see* Harlow, W. M.
Harrar, J. G., and Ellis, R. P. 4 193
— and Martland, J. G. 2 29, 4 193
Harrer, F. 4 54
Harris, C. M., *see* Eggeling, W. J.
Harris, D., *see* Hill, R. R.
Harris, E. E. 2 303, 3 52
— and Adkins, H. 1 276
— and Lofdahl, L. J. 4 175
— and Mitchell, R. L. 1 283
— and Sherrard, E. C. 3 142
Harris, F. 5 49
Harris, G. A., *see* Young, V. A.
Harris, G. W. 2 231
Harris, H. A., *see* Tehon, L. R.
Harris, M. R. 5 137
Harris, P. 3 59, 4 52, 5 272
Harris, T. H. 3 76
Harris, W. V. 5 39
Harrison, C. A., *see* McNaughton, G. C.
Harrison, C. H. 5 20
Harrison, F. A. 3 180
Harrison, G. H. 4 132
Harrison, J. D. B. 4 138, 175, 5 71
Harrison, J. L. 2 69, 241, 5 196
Harrison, J. W. H. 5 142, 174
Harrison-Smith, J. L. 2 69, 3 331
Harry, J. B., *see* Davis, W. C.
Hart, St. G. 4 166
Hartgen, V. 4 167
Hartikainen, E. 2 277
Hartley, C., *see* Davis, W. C.
— *see* Scheffer, T. C.
Hartman, W. A. 3 178, 5 73
Hartmann, M., and Schlittler, E. 3 23
Hartzell, A. 5 142
—, Collins, D. L., and Blauvelt, W. E. 5 142
— and McKenna, G. F. 3 255
Harvey, H. 5 58
Harvey, J. E. 3 231, 5 47, 48
Harvey, P. A. 2 146
Hasche, R. L. 3 236
Hasegawa, K. 2 245
Hasel, A. A. 3 34, 4 63, 5 205
Haseman, L. 2 328, 4 132
— and McLane, S. R. 3 252
Hassel, G. M. von 4 51
Hassenkamp, W. 3 21
Hatfield, I., *see* Carswell, T. S.
Hatusima, S., *see* Kanehira, R.
Hattori, T., and Tamura, T. 2 145
Haug, H. 3 267
Haupt, A. W. 3 107
Haurath, H. 3 293
Hausendorff, E. 3 296
Haurath, H. 1 30
Haviland, E. E. 5 245
Hawbecker, A. C., and Bond, R. M. 4 139
Hawboldt, L. S., *see* Balch, R. E.
Hawes, N. E. 3 106
Hawkins, R. S. 4 113, 5 36
Hawkins, W. L., *see* Brickman, L.
— *see* Fisher, J. H.
Hawley, F. 4 134
Hawley, R. C., and Clapp, R. T. 4 259
Haworth, R. D. 3 66
Hay, H. R. 3 144
Hay, K. D., and Lewis, H. F. 3 23
Hayden, A. 5 240
Hayes, G. L. 3 72, 4 124, 5 87, 159
Haygood, T. F., and Day, B. B. 4 262
Hayward, P. A. 3 91, 358, 4 11
Heacox, E. F. 4 197
Headlee, T. J., and Jobbins, D. M. 2 152
Headley, R. 1 103, 293, 2 242, 324
Healy, V. M. 3 43
Hearman, J. 1 22
Hearmon, R. F. S. 5 36
— and Barkas, W. W. 4 34, 5 182
Hearn, A. H., *see* Lumsden, G. Q.
Heath, G. D., *see* Bhattacharya, R.
Hebb, H. C. 3 280
Heber, K. 4 212
Hechler, G., *see* Hilpert, R. S.
Heck, G. E., *see* Markwardt, L. J.
Hecker, H. W., and Brunn, W. 1 101
Hedeman-Gade, E. 2 318, 3 207
Hedgcock, G. G. 1 239, 3 339
Heerden, P. W. van, *see* Ripley, L. B.
Heger, A. 4 22
Heger, R. 4 54
Heiberg, S. O. 4 151, 197
— and Chandler, R. F. 3 284
Heidema, E. J. 3 333
Heidenreich, E. 3 138
Heidiken, F. von 5 259
Heijbel, I., *see* Enander, M.
Heikinheimo, O. 1 40, 72, 2 128, 5 178
Heim, R. 2 128, 136
Heimburger, C. C. 1 246, 2 7, 117, 3 262, 4 138, 227
— and McCallum, A. W. 2 18
Heimsch, C. 2 140, 4 31, 169
— and Wetmore, R. H. 1 272
Heinicke, A. J. 2 189
Heiniger, R., *see* Jayme, G.

AUTHORS INDEX

- Heinrich, F. 3 123, 4 125
 Heinrich, H. 4 182
 Heit, C. E. 1 255, 2 37, 38, 4 25, 101, 164, 5 29, 161
 — and Eliason, E. J. 2 27, 132, 3 302, 4 26
 — and Henry, H. K. 2 286, 3 256
 Hellemans, A. H. W. 5 118
 Heilinga, G. 1 92, 106, 300, 2 332
 — see Ferguson, J. H. A.
 Hellman, F. S. 1 282
 Hellner, K. 5 209
 Hellström, N. 4 35, 5 116
 Helmers, A. E. 5 98
 Helms, C. D. 2 181
 Helphenstine, R. K. 2 60, 228, 3 322, 4 177
 Hemmi, T., and Akai, S. 2 119
 —, Akai, S., and Ohno, H. 5 116
 — and Ikeya, J. 1 241
 Henderson, F. Y. 1 309
 Henderson, H. L., see Hoyle, R. J.
 Henderson, I. F., and Henderson, W. D. 1 223
 Henderson, M. R. 2 24
 Henderson, S., see Johnson, V. W.
 Henderson, W. D., see Henderson, I. F.
 Hendricks, B. A. 4 86
 — and Johnson, J. 2 69
 — see Cooperrider, C. K.
 Henne, A. 5 8
 Hennig, see Früchtenicht
 Hennig, K., and Ohske, P. 3 66
 Hennig, T., see Schwarz, R.
 Hennard, P. 2 114
 Henry, B. W., and Moses, C. S. 5 61
 — and Wagner, E. C. 2 326
 Henry, H. K. 2 73, 4 130
 — and Heit, C. E. 2 286, 3 256
 Henry, L. E. R. K. 1 76
 Hepting, G. H. 2 246, 3 245, 4 188, 5 138
 —, Garen, K. H., and Warlick, P. W. 2 285
 — Roth, E. R. 5 59
 —, Roth, E. R., and Luxford, R. F. 5 260
 — and Toole, E. R. 1 188, 5 279
 — see Boyce, J. S.
 Heraux, G. 1 126
 Herbert, P. A., see Holcomb, C.
 Herfeld, H., see Stather, F.
 Hergula, B. 1 153
 Hering, M. 1 206
 Heringa, P. K. 1 80
 Hermann, A. 4 170
 — and Rasmussen, C. A. 2 59
 Herms, W. B. 2 146
 Herr, W., see Clotofski, E.
 Herrera, F. L. 2 180, 5 130
 Herrick, A. M. 2 249, 5 143
 Herrick, J. A. 2 26
 Hershey, J. W. 3 28, 4 214
 Hertz, M. 1 56
 Hertzler, R. A. 1 233
 Herz, W. 3 147
 Herzner, R. A. 1 45
 Heske, F. 4 13, 149
 Hesmer, H. 3 280
 — and Meyer, J. 1 195, 4 12
 Hess, E. 2 7, 276, 4 16, 5 252
 Hess, R. 1 191
 Hess, R. W. 3 309, 5 118
 — see Record, S. J.
 Hesselberg, T. 5 159
 Hesselmann, H. 2 207
 Hessenland, M. 5 270
 Hestdalen, L. F. 1 184
 Hetrick, L. A. 3 253, 4 59, 130, 251
 Hetzel, J. E. 1 191, 2 296, 4 104
 Heuberger, J. W. 2 245
 — see Dimond, A. E.
 — see Horsfall, J. G.
 Heuck, C., see Engelhardt, R.
 Heuson, R. 1 15
 Hewetson, C. E. 2 199, 4 93, 5 290
 Hewitt, A. C. T. 4 184
 Hewson, D. T. 2 242, 243
 — and Wright, J. G. 2 243
 Hewson, W. B., and Hibbert, H. 5 183
 Hexnerová, H., see Jakeš, E.
 Heybey, R. 3 305
 Heyn, A. N. J. 2 190
 Heyse, T. 1 109
 Heyward, F. 1 51, 84, 229, 2 332, 3 91
 Hibbard, P. L. 2 185
 Hibbert, H. 1 174
 — see Bower, J. R.
 — see Brickman, L.
 — see Cramer, A. B.
 — see Fisher, J. H.
 — see Godard, H. P.
 — see Hewson, W. B.
 — see Hunter, M. J.
 — see Kulkla, M.
 — see Peniston, Q. P.
 — see West, E.
 — see West, K. A.
 Hicks, W. T. 1 185
 Hicock, W. H., Olson, A. R., and Seeley, L. E. 4 242
 —, Rhodes, A. D., and Olson, A. R. 2 76
 — see Olson, A. R.
 Hilborn, M. T. 3 35, 5 20
 — and Steinmetz, F. H. 3, 53, 5, 39
 Hildebrand, W. H. 5 179
 Hilditch, T. P., and Zaky, Y. A. H. 4 216
 Hildman, A. T. 2 205
 Hiley, W. E. 1 108, 196, 3 264
 Hilf, H. H. 1 17, 2 147, 295, 3 329, 4 173, 5 261
 Hill, A. C. 2 67, 5 264
 Hill, A. F. 2 126
 Hill, C. M. 5 48
 — see McMahon, W.
 Hill, D. F., Mottet, A., and Loughborough, W. K. 3 234
 Hill, G. F. 5 25
 Hill, R. R., and Harris, D. 5 174
 Hill, W. B. 4 41
 Hillier, E. L. 4 95, 5 172
 Hilpert, R. S., Kruger, W., and Hechler, G. 1 175
 Himsforth, F. R., see Lefebure, V.
 Hinde, J. P. 5 10
 Hindenburg, K.-G., see Jayme, J.
 Hintikka, T. J. 5 166
 Hirane, S. 1 141, 241, 3 249
 Hirata, T. 1 292
 Hirst, E. J., Jones, J. K. N., and Campbell, W. G. 2 302
 Hirt, R. R. 1 241, 2 285, 4 189
 — and Hopp, H. 4 20
 Hislop, J. 4 187
 Hislop, J. J. 2 296
 Hitchcock, A. E., and Zimmerman, P. W. 1 261, 2 134, 135, 3 200, 4 216
 Hitchens, R. M. 5 267
 Hitchens, W. G. 5 43
 Hixson, E. 4 194
 Hoar, C. A. 3 243
 Hoback, V. G., Weiss, H. L., and Phelan, W. B. 5 135
 Hobart, S. G. 5 231
 Hobbs, C. H. 3 158
 Hock, C. W., see Avery G. S.
 Hocking, G. H., and Mayfield, A. G. K. 2 42
 Hocking, K. S., see Potter, C.
 Hødal, A. 2 81
 Hodge, R. E., see Bateson, R. G.
 Hodge, W. H. 4 83, 93, 157, 159, 5 100
 Hodgins, H. J. 2 7, 3 179
 Hodgson, D. H. 1 302
 Hodgson, L., see Burns, M. M.
 Hodson, A. C. 5 63, 142
 — and Christensen, C. M. 4 194
 — see Leach, J. G.
 Hoehne, F. C. 3 116, 294
 Hoffman, B. 3 177
 Hoffman, C. H. 2 248, 3 255, 347, 4 224
 — and Moses, C. S. 3 79
 — see Moses, C. S.
 Hoffmann, R. 1 38, 2 39, 4 89
 Hofmann, A. 4 94
 Hofmann, C. 1 52, 105, 2 74, 3 82, 4 130
 — and Dauberschmidt, K. 1 297
 Hohenadl, W. 1 192
 Hohf, J. P., see Bateman, E.
 — see Sherrard, E. C.
 Höjer, E. W. 4 264
 Holcomb, C., and Herbert, P. A. 5 232
 Holdheide, W. 4 82
 — see Huber, B.
 Holdridge, L. R. 1 126, 227, 2 35, 38, 125, 5 21, 68, 100
 Holdsworth, R. P. 3 258, 266
 — see Doran, W. L.
 Holland, W. W. 5 45
 Holm, F. 5 174
 Holman, H. J. 2 168
 Holmberg, B., and Gralen, N. 5 258
 Holmes, B. M., see Almond, J. N.
 Holmes, C. H. 3 304, 5 109
 Holmes, M., and Maze, W. H. 2 68
 Holmgren, A. 5 288
 Holmstrom, J. 3 316
 Holsoe, T. 3 21
 Holst, E. C., see Bramble, W. C.
 Holtman, D. F. 3 334, 4 123
 Holtum, R. E. 2 288
 Holway, R. T. 4 110
 Holzer, W. F. 3 230

AUTHORS INDEX

Hone, A. A. 2 252
Hood, C. E. 2 248, 3 255
Hood, S. L., *see* Parks, R. Q.
Hoon, R. C. 1 128
— and Dhawan, C. L. 3 282
Hooper, P. D., *see* Penman, F.
Hoover, M. D., *see* Hursh, C. R.
Hoover, M. M. 1 292
Hope, J. G. 5 160
Hopkins, A. S. 4 103
Hopkins, G. H. E. 4 261
Hopkins, G. M. 1 280
— *see* Baldwin, H. I.
Hopkins, H. 3 180
Hopkins, H. T., and Donahue, R. L. 2 293
Hopkins, J. W., *see* Grace, N. H.
Hopkins, M. 4 158, 223
Hopp, H. 3 40, 4 96
— and Posey, G. B. 4 243
— *see* Hirt, R. R.
Hopping, G. R. 5 107
Hora, F. B., and Greenway, P. J. 3 32
Horden, R. H. 5 188
Horio, M., *see* Hukuda, Y.
Horiuchi, R. 3 347
Hörmann, B. 4 121
Hormay, A. L. 4 64
Horn, C. L. 5 237
Horn, H. 3 317
Hornbrook, E. M. 1 158, 299, 2 250, 4 259
Horning, W. H. 4 137
Horsfall, J. G., Heuberger, J. W., Sharvelle, E. G., and Hamilton, J. M. 2 159
— and Zentmyer, G. A. 4 188, 5 62
— *see* Dimond, A. E.
Horton, J. S. 4 95
Horvat, I. 1 148, 5 231
Horwitz, S. 1 283, 2 56
Hosmer, R. S. 2 276
Hossfeld, R. L., Gortner, R. A., and Kaufert, F. H. 5 265
Hossli, H. 2 119
Hotson, H. H. 3 115
Hotta, T. 1 248
Hough, A. F. 3 89, 314, 5 26, 102, 241, 248
— and Forbes, R. D. 5 239
— *see* Turberville, H. W.
House, H. D., *see* Dearness, J.
Houser, J. S. 2 328, 5 282
Houten, J. G. ten 1 104
Houtermans, P. 1 154
How, J. E. 2 11, 3 103, 4 85, 5 11
Howard, A. L. 4 107, 5 171, 172, 243
Howard, F. L., and Caroselli, N. 2 72, 3 76, 4 56, 127, 191
Howard, J. A., *see* Penfound, W. T.
Howard, R. A. 2 290, 4 21, 222, 5 243
— *see* Bailey, I. W.
Howard, S. H. 1 86, 162, 2 279, 3 100, 279 4 147, 5 210
Howell, J. 3 175
— and Lexen, B. R. 4 195
Howell, J. T. 3 115, 5 19
Hoves, F. N., *see* Tattersfield, F.
Höye, J., *see* Schmidt-Nielsen, S.
Hoyer, F. 1 46
Hoyle, R. J. 3 316

Hoyle, R. J., Henderson, H. L. Blew, J. O., and Brown, N. C. 3 132
Hribar, V. P. 4 177
Hrisafi, C. P. 2 330
Hsu, S. H., Chang, H. L., and Tien, Y. W. 4 121
Hu, E. 2 309
Hu, H.-H. 3 115, 294
— and Tang, T. 3 294
Hu, T. C. 2 296
Hubault, E. 1 155
Hubbard, C. S., *see* Tooke, F. G. C.
Huber, B. 2 45, 4 63, 121
—, Holdheide, W., and Raack, K. 4 231
— and Schmidt, E. 3 60
Huberman, M. A. 2 134, 212, 3 298, 5 273
— *see* Condit, G. R.
— *see* Schreiner, E. J.
Hubert, B., and Rappaport, J. 2 40
Hubert, E. E. 2 152, 3 143, 4 36, 177, 5 189
— and Rasmussen, C. A. 4 174
Hubert, H. 1 231
Hubricht, L., *see* Anderson, E.
Hudson, J. E. 1 223, 2 180, 5 229
Hudson, M. S. 4 180
— and Baechler, R. H. 2 230
Hueck, K. 2 111
Huettl, R. F., *see* Rowley, F. B.
Hufnagl, L. 1 56, 86
Hugershoff, R. 1 55
Hughes, A. D. 4 241
Hughes, J. E., *see* Buck, C. C.
Hukuda, Y. 2 150
— and Horio, M. 2 150
Hukuhara, S., *see* Tutiya, M.
Hulbary, R. L. 3 339
— *see* Matzke, E. B.
Hulet, H. C. 2 244
Hull, R. B. 3 303
Hulsart, C. A. 2 240
Hulssen, C. J. van, and Meyer, T. M. 4 51
Hummelgren, E. 5 127
Humperdinck, C. 1 180, 4 42
Humphrey, I. W. 5 270
Humphrey, R. R., and Lister, P. B. 3 352
Humphreys, M. E., *see* Oosting, H. J.
Hungate, R. E. 3 54
Hunt, G. M. 1 180, 4 171
—, Baechler, R. H., and Blew, J. O. 4 177
— and Snyder, T. E. 2 229, 3 322, 4 177
Hunt, K. W. 5 241
Hunter, M. J., *see* Cramer, A. B.
— Cramer, A. B., and Hibbert, H. 1 175
Hunter, A. W. S., and Davis, M. B. 5 278
Hunter, W. 3 206, 5 21
Hurel-Py, G. 4 233
Hurley, P. J. 3 56
— and Stevens, D. R. 5 69
Hursh, C. R. 2 69
— and Connaughton, C. A. 1 78
— and Hoover, M. D. 4 152

Hurwitz, C., *see* Parks, R. Q.
Hurych, A. 5 46
Husemann, E., *see* Staudinger, H.
Hussain, M. T. 1 38
Hutchins, C. M., and Armstrong, V. L. 2 224
Hutchinson, A. H., *see* Pillsbury, R. W.
Hutchinson, H. P. 1 232
Hutchinson, J. 4 96
Hutchison, S. B. 4 213
— and Winters, R. K. 3 100, 5 158
— *see* Whitney, C. N.
Huziwar, T., *see* Simoda, I.
Hwang, Y. 1 16
Hyland, F. 3 133
Hyle, R. J. 5 75
Hyler, J. E. 3 61, 156, 5 75
Hyo, Z., *see* Osima, Y.
IGLESIAS, F. de A. 5 211
Ignat'ev, S. N. 3 47
Ignatieff, V., *see* Wyatt, F. A.
Igney, M., *see* Riechers, K.
Ihlen, N. N., *see* Anderson, S.
Imne, A. 2 85
Ijjasz, E. L. 2 12
Ikenberry, G. J., Bruce, H. D., and Curry, J. R. 1 52
Ikert, B. 2 60, 4 42
Ikram, M., *see* Narayanamurti, D.
Il'inski, A. P. 2 13
Illick, J. S. 2 84
Ivessalo, Y. 2 182, 276
Imai, M., *see* Tutiya, M.
Imai, S., *see* Ito, S.
Imazeki, R. 2 52, 3 76
Imms, A. D. 4 223
Inder, R. W. 1 133
Ineson, F. A., and Rayl, E. M. 4 122
Ingold, C. T. 5 171
Inouye, M. 2 122, 3 344, 347
— *see* Kōno, H.
Ingram, C. 5 173
Ionov, B. D. 1 185
Ionov, M. I. 1 299
Ireland, H. A., Sharpe, C. F. S., and Eargle, D. H. 1 233
Irish, C. F., *see* Swingle, R. U.
Irsa, G. I. de 4 43
Irschick, E. 4 236
Irvine, C. J. 3 328
Irving, M. 3 298
Isaac, E. E. 5 33
Isaac, L. A. 1 32, 128, 257, 2 197, 294, 295
Isaac, R. 3 81
Isenberg, I. H. 5 239
Ishaq, S. M., *see* Rehman, M. A.
Ishii, T. 2 128
Isii, M., and Osima, Y. 2 236
—, Osima, Y., and Hyo, Z. 4 49
Ito, S., and Imai, S. 2 289
Ivakin, I. A., *see* Federov, L. E.
Ivaschenko, A. I. 1 252
Ives, R. L. 3 194, 4 19, 104
Iwadare, K. 4 109
Iyer, J. S. 5 190
Iyyar, S. N. C., and Reddy, T. V. 5 133

AUTHORS INDEX

- JABLONSKY, B. 1 283, 3 141
 Jaccard, P. 1 95, 2 45, 46
 Jacks, G. V., and Scherbatoff, H. 2 113
 — and White, R. O. 1 111
 Jackson, C. H. N. 2 201
 Jackson, L. W. R. 2 41, 136
 — see Gravatt, A. R.
 Jackson, T. H. 2 40
 Jackson, W. E. 2 203
 Jacob, K. C. 4 158
 Jacob, M. C. 3 18, 212, 4 83
 Jacobs, H. L., see Tehon, L. R.
 Jacobs, J. J., see Othmer, D. F.
 Jacobs, M. R. 1 21, 40, 44, 193, 2 32, 33, 54
 Jacobson, M. G. 2 206
 Jacot, A. P. 1 230
 Jager, J. C. 4 46, 5 50
 Jager Gerlings, J. H. 1 226, 4 83
 —, Smit, J. F., and Soest, J. van 1 236
 Jahn, E. 3 168, 4 97, 5 37, 245
 — see Bloom, P.
 Jahn, E. C. 1 291
 — and Coppick, S. 3 221, 5 188
 — see McNair, J. J.
 Jahrstorfer, M., and Beck, J. 5 41, 264
 Jaks, E., and Hexnerová, H. 1 291
 Jakobs, H. 2 66
 Jalava, M. 1 176
 James, M. C. 4 262
 James, N. D. G. 1 101, 164, 172, 281
 Jane, F. W., see Salisbury, E. J.
 Janett, W., see Ruzicka, L.
 Janisch, E. 4 132
 Janson, E., and Halfert, E. 5 155
 Janson, R. W. G. 1 55, 3 289
 Jansson, A. 1 124
 Japing, H. W., see Bahrfeldt, K.
 Japing, R. 2 161
 Jaques, H. E. 2 198
 Jaramillo, J. M. D. 5 170
 Jaramillo, R. 3 206
 Jay, B. A. 4 52, 263
 — see Boulton, E. H. B.
 Jayme, G. 4 176
 — and Heining, R. 1 273
 — and Kerler, E. 2 57
 — and Lochmüller-Kerler, E. 4 175, 5 44
 — and Schorning, P. 2 149
 Jayme, J., Hindenburg, K.-G., Harders-Steinhäuser, M., and Branscheid, F. 5 122
 Jeffers, D. S. 5 213
 Jeffrey, G. A., see Tristram, G. R.
 Jeffreys, F. J. 2 202
 Jemison, G. M. 1 293, 2 157, 4 187, 246, 5 67, 198
 — and Keetch, J. J. 3 160, 5 198
 — see Barrett, L. I.
 — see Byram, G. M.
 Jemtzeff, W. 1 96
 Jenet, J. 4 42
 Jenkins, A. E. 5 61, 138, 139
 — and Grodinsky, L. 5 138, 279
 — and Ray, W. W. 2 192
 Jenkins, C. F. H. 4 41
 Jenkins, J. H. 1 97, 101, 182
 — and Guernsey, F. W. 1 274
 Jenness, L. C., and Caulfield, J. G. L. 3 331
 Jennings, W. H. 5 52
 Jensen, H. 3 26, 4 15, 5 177, 252
 — and Levan, A. 4 90
 Jensen, H. A. 1 246
 Jensen, V. S. 2 216, 3 58, 156, 175, 314, 5 31
 —, Behre, C. E., and Benson, A. O. 3 152
 — and Desmond, R. C. 4 213
 Jeness, O., see Wolff, M.
 Jentsch, F., Appel, E., and Schmidt, E. 1 169
 Jentys-Sfazerowa, J. 1 22
 Jepson, H. G. 2 69
 Jerram, M. R. K. 1 310, 2 162
 — see Thomson, T.
 Jervis, A. E. L. 4 113, 5 187, 263
 Jervis, J. E. 4 38
 Jesse, W. C. 3 42
 Jessen, W. 1 132, 231, 4 14
 Jessup, D. A., Weber, C. G., and Weissburg, S. G. 1 96, 2 225
 Jester, J. R., and Kramer, P. J. 1 228
 — see Stoutemyer, V. T.
 Jewett, G. F., Compton, W., and Woods, J. B. 2 334
 Joachim, A. W. R., and Kandiah, S. 4 85, 87
 Jobbins, D. M., see Headlee, T. J.
 Joerns, A. 4 12
 Johansson, D. 5 260
 Johansson, F., see Fallenius, B.
 Johansson, O. A., and Butt, F. H. 3 206
 Johansson, S. 5 206, 287
 Johnson, C. 5 58
 Johnson, E. M., see McKenzie, M. A.
 Johnson, F. A. 5 208
 — and Crammer, J. R. 3 349
 Johnson, H. M. 1 124, 3 280, 5 117
 Johnson, J., see Hendricks, B. A.
 Johnson, J. A. 3 106
 Johnson, J. P., see Andrews, L. K.
 Johnson, J. W. 3 310
 Johnson, L. P. V. 1 234, 2 16, 4 36
 — and Linton, G. M. 4 247
 Johnson, P. C. 3 167, 5 202
 — see Miller, J. M.
 Johnson, R. A. 2 313, 4 43
 — and McNeill, F. A. 4 36
 Johnson, R. P. A. 5 119
 — and Davis, E. M. 1 290
 Johnson, R. S. 5 212
 Johnson, V. W., Henderson, S., and Marshall, J. H. 2 255
 Johnson, W. M. 2 115
 — and Niederhof, C. H. 3 287
 Johnson, H. 2 283, 3 110, 4 91, 154, 156, 5 249
 — and Eklundh, C. 3 27
 Johnston, A. K. 4 46
 Johnston, D. D., see Stevens, W. C.
 Johnston, H. R. 5 184
 — and Eaton, C. B. 2 41, 4 193
 Johnston, H. W., see Beazley, W. B.
 Johnston, I. M. 2 127, 5 169
 Johnston, J. P. 3 41
 Johnston, J. W. 3 20, 21
 Johnstone, G. R. 3 29
 Jokinen, P. 5 212
 Jolliffe, W. H. 3 297
 Joly, M. L. 1 48
 Jones, B. 1 127, 5 89
 Jones, F. H., and Peace, T. R. 1 76
 Jones, G. N. 4 96
 Jones, H. R. 1 103, 4 111
 Jones, J. K. N., see Hirst, E. L.
 Jones, M. G. 5 286
 Jones, N. C. 2 67
 Jones, T. H. 2 75
 — and Moses, C. S. 5 138
 — see Wolfenbarger, D. O.
 Jones, W. C., see Schumacher, F. X.
 Jong, B. de 1 27
 Joranson, P. N., and Kuenzel, J. G. 2 206
 — see Schantz-Hansen, T.
 Jordan, O. 5 46
 Jordan, R. C., see Rowley, F. B.
 Jordano, J. L. 1 148
 Jørgensen, C. A., Lund, A., and Treschow, C. 1 188
 — see Ferdinandsen, C.
 Jørgensen, W. E. 4 211
 Jørstad, I., and Juul, J. G. 1 103
 Josephson, H. R. 4 65
 Joshi, A. C. 1 170, 5 167
 Joshi, W. V., see Kumar, L. S. S.
 Joubert, A. 2 33
 Joy, E. L. 4 247
 Joyce, A. R. 4 48
 Joyce, R. 1 182
 Jubitz, W., see Gerdien, H.
 Junack, H., see Mayer-Wegelin, H.
 Junell, S. 2 120
 Jung, W. 5 65
 Junge, W., see Clotofski, E.
 Junghans, W. 3 192, 4 148
 Junker, E. 4 151
 Juravlev, I. I. 1 141
 Jusev, V. I. 1 243
 Juul, J. G., see Jørstad, I.
 KACHIN, T., 1 267, 2 216, 294, 299, 302
 Kaegi, H. I. 1 291
 Kaeser, M., see Buchholz, J. T.
 Kahn, H. S. 4 245
 Kahn, S. H. 2 58
 Kain, A. 1 291
 Kaktiņš, E. 1 78
 Kalandra, A. 1 85, 5 283
 Kalbfleisch, W., see Ripley, P. O.
 Kalela, A. 5 170
 Kalela, E. [K.] 2 333, 5 247
 Kállay, A. 2 330
 Kallenbach, F. 1 95
 Kaliola, R. 5 291
 Kalnina, V. N., see Sharkov, V. I.
 Kalniņš, A., and Liepiņš, R. 1 169
 Kalshoven, L. G. E. 1 85, 3 283
 Kaltwasser, J. 5 39, 173
 Kamalam, V. K., see Ekambaram, T.
 Kamalapur, V. R. 3 124, 5 29

- Kamazuka, A., and Rokusho, B. 3 328
 Kameson, S. 1 44
 Kamiya, K. 3 256
 Kandiah, S., *see* Joachim, A. W. R.
 Kanehira, R., and Hatusima, S. 4 20
 — and Sumihiko, H. 1 249, 3 36
 Kangas, E. 4 132, 5 176, 204, 252
 Kanjilal, P. C., *see* Kanjilal, U. N.
 Kanjilal, U. N., Das, A., Kanjilal, P. C., and De, R. N. 3 203
 Kano, G. 3 311
 Kapel, F. J., *see* McComb, A. L.
 Kapur, I. K., *see* Rehman, M. A.
 Kapur, S. N. 1 49, 100, 5 120
 — and Rehman, M. A. 1 286, 2 59
 Karakoulis, B. P. 1 288
 Karamchandani, J. V. 4 147, 5 127
 Karling, J. S. 5 54
 Kärnbach, K., *see* Enders, C.
 Karuzin, B. V. 4 29
 Kasai, M. 1 277
 Kasima, H. 3 143
 Kaster, R. B., *see* Anderson, E.
 Kaston, B. J. 1 249
 Kato, Y., *see* Tutiya, M.
 Katsumata, K. 3 83
 Katzen, R., Muller, R. E., and Otmer, D. F. 5 126
 — and Othmer, D. F. 4 119, 5 126
 —, Reynolds, A. O., and Othmer, D. F. 5 46
 Kaufert, F. H., and Behr, E. A. 5 117
 — *see* Christensen, C. M.
 — *see* Flenner, A. L.
 — *see* Hossfeld, R. L.
 — *see* Rees, L. W.
 Kaufmann, F. 4 3
 Kaufmann, H. P., and Liu, F.-Y. 4 50
 Kausel, E. 3 117
 Kausik, S. B. 5 22
 Kawada, A., and Suenaga, H. 3 83, 346
 Kawase, K., *see* Watanabe, M.
 Kawashima, R., and Nagata, M. 3 197
 —, Nagata, M., and Suyama, G. 3 197
 — and Suyama, G. 3 120
 Kawauti, A., *see* Minami, T.
 Kazeeva, E. V., *see* Krestinski, V. N.
 Kearns, R. S. 2 163
 Keator, F. W., *see* Seeley, L. E.
 Keen, F. P. 2 205, 5 108
 — and Salman, K. A. 4 255
 Keeney, W. D. 3 240
 Keepers, C. H. 5 206
 — *see* Koon, C. M.
 Keet, J. D. M. 2 188
 Keetch, J. J., *see* Jemison, G. M.
 Keeth, G. 1 291
 Keifer, H. H. 5 107
 Keith, H. G. 2 108, 276
 Keith, L. P. 4 123
 Kekukh, A. M., *see* Gavris, Yu. A.
 Kelle, A. 3 169
 Keller, A. C. 4 96
 Keller, C. O. 5 86
 Keller, E. 1 51
 Keller, E. L., and McGovern, J. N. 5 122 (2)
 Kelley, A. P. 1 76, 130, 2 10, 19, 3 20, 4 14, 5 11
 Kelley, F. A. 2 224
 Kelley, M. A. R. 2 242
 Kellogg, L. F. 1 300, 3 350
 —, Emmer, R. E., and DenUyl, D. 3 349
 — *see* Cawmer, J. R.
 — *see* Diller, O. D.
 — *see* Emmer, R. E.
 — *see* Schramm, W. O.
 Kellogg, R. S. 1 225
 Kelly Edwards, E. J. 2 112, 4 38
 Kelly, J. A. 5 119
 Kelly, J. L. 3 227, 5 118
 Kelsh, H. T. 4 138
 Kelsheimer, E. G., and May, C. 2 194, 3 79
 Keltikangas, V. 5 290
 Kelus, O. G. 4 160
 Kemp, M. 5 166
 Kemp, P. D., *see* Cummings, L. J.
 Kendeigh, S. C. 3 264
 Kennedy, H. 5 288
 Kennedy, J. D. 4 199, 5 73
 Kenoyer, L. A. 5 170
 Kephart, G. S. 3 281
 Keppner, T. 4 198
 Kerler, E., *see* Jayme, G.
 Kerr, G. A. 5 193
 Kerr, G. R. G. 4 184
 Kessel, S. L. 3 53, 5 246
 — and Stoaite, T. N. 1 29
 Kesselman, J., *see* Anderson, E. 3
 Ketch, J. J., *see* Barrett, L. I.
 Keyes, J., and Smith, C. F. 5 110
 Khan, A. W., *see* Rahman, K. A.
 Khan, F. M. 5 179
 Khan, K. B. A., *see* Thirumalachar, M. J.
 Khandros, L. M. 4 39
 Kharitonov, G. A. 1 232
 Kharitonovich, F. N. 2 131, 4 84
 Khaykin, S. Kh., *see* Nikolaev, N. F.
 Khinchin, Ya. G. 2 226
 Khilail, M. A. K. 5 32
 Khomenko, K. A., *see* Sambur, G. N.
 Kiaer, T. 3 300, 305
 Kieffer, H. 2 156
 Kienholz, R. 2 113, 3 209, 335
 Kienitz, G. A. 1 50
 — and Klauditz, W. 4 40
 Killand, T. K. 5 112
 Killinger, J. E. 5 263
 Kilpper, W., *see* Brecht, W.
 Kimball, K. E., *see* Rietz, R. C.
 Kimball, M. H. 5 254
 Kimbrough, W. D., Miller, J. C., and Wilson, W. F. 5 12
 Kimmey, J. W. 2 20
 — and Furniss, R. L. 5 260
 — *see* Childs, T. W.
 — *see* Mielke, T. L.
 Kimoto, M. 1 285
 Kimura, Y., *see* Shikata, M.
 — *see* Watanabe, M.
 Kin, H., *see* Shikata, M.
 King, E. W. 5 107
 King, H., and Davies, A. 2 242
 King, N. L. 1 13, 2 9, 35, 185, 3 191, 4 165
 King, T. R., and Titus, H. W. 5 130
 Kingston, R. S. T., 2 48, 51
 Kinloch, J. B. 2 78
 — *see* Burtt Davy, J.
 Kinman, G. 5 198
 Kinoshita, E. 2 160
 Kiplinger, D. C., *see* Chadwick, L. C.
 Kirchhoff, J. 48
 Kirchhoff, J., and Vogt, G. E. 4 45
 Kirikov, S. V. 3 37
 Kirkham, D. P. 1 293
 Kirkland, B. P. 3 178, 4 263, 5 290
 Kirkpatrick, H. 2 135
 Kissar, J. 4 106, 174
 Kissin, I. 2 331, 4 47
 Kitano, S., *see* Miura, I. 1 284
 Kitchingman, G. D. 2 299
 Kittams, W. H. 5 174
 Kittredge, J. [A.]. 1 19, 131, 2 186
 —, Loughhead, H. J., and Mazurak, A. 3 105
 Kivekäs, K. 2 282
 Klar, M. 1 48
 Klé 1 39
 Klauditz, W. 4 114, 175, 5 34, 37
 — *see* Kienitz, G. A.
 Kleeck, A. van 2 319, 3 232, 4 179
 Klehm, K. A., *see* Davis, K. P.
 Klein, H., *see* Scheuermann, H.
 Klein, L. 4 38
 Kleinhoonte, A. 3 294
 Klein-Krautheim, F., *see* Merker, E.
 Klem, G. G. 5 253
 Klemin, A. 5 188
 Klemm, H. 5 41
 Klemm, M., *see* Voelkel, H.
 Klemme, M. 1 126
 Klenfeldt, E. 3 89, 182
 Klingstedt, F. W. 3 134
 Klinskikh, E. V., *see* Sumarokov, V. P.
 Kloet, G. S. 3 256, 4 22
 Klund, H. A., and Gardner, H. A. 5 46
 Knapp, F. M. 1 306, 2 110
 Knapp, K. H., and Libby, J. A. 5 163
 Knauth, B., and Neuhoff, W. 1 84
 Knechtges, R. G., *see* Pew, J. C.
 Knight, A. G. 4 112
 Knight, C. D. 1 191
 Knight, D. M., *see* Arend, J. L.
 Knight, H. H. 1 152
 Knight, R. A. G., and Armstrong, F. H. 1 47
 — and Dean, A. R. 1 180
 Knorr, P. 4 187
 Knowlson, H. 1 81
 Knowlton, G. F. 4 192, 252, 253
 — and Thornley, H. F. 4 253
 Knuchel, H. 1 177, 2 19, 24, 54, 3 141, 4 182, 5 259
 Knudson, J. I., *see* Aries, R. S.
 Kobayashi, S., *see* Tadokoro, T.
 Kobayashi, Y. 3 77
 Kobe, K. A., and Goin, F. L. 1 288
 — *see* Haffner, L. C.
 Kobendza, R. 1 83
 Kobranov, N. P. 2 214
 Kobuski, C. E. 1 150, 2 126, 3 117, 4 21, 97, 222, 5 23

AUTHORS INDEX

- Koch, E. **4** 24
 Koch, F., and Koch, H. **5** 128
 — see Bergius, F.
 Koch, F. C., see McMahon, W.
 Koch, H., see Koch, F.
 Koch, H.-G. **4** 84
 Koch, W. **4** 199
 Kocherzhenko, I. E., see Moshkov, B. S.
 Koehler, A. **1** 237, **2** 306
 Koen, H. R. **1** 108
 Kohnke, H. **3** 47
 — and Dreibelbis, F. R. **1** 133
 —, Dreibelbis, F. R., and Davidson, J. M. **2** 283
 Kokina, S. I., and Popova, Z. T. **3** 119
 Kolachov, P. J., see Glazoff, S. de Kolbe, E. L. **1** 266
 — and McKay, D. F. **1** 280
 Kolesnikov, A. I. **2** 168
 Kollman, F. **1** 97, **100**, **2** 57, **3** 52, **4** 106, **168**, **174**, **5** 258
 — and Schulz, F. **2** 50
 Kolubajiv, S. **1** 154
 — see Komárek, J.
 Komárek, J., and Kolubajiv, S. **4** 130
 Komissarov, D. A. **1** 136, **184**
 Komshilov, N. F., see Krestinski, V. N.
 Kon, T. **2** 241
 Koning, H. C. **4** 191
 König, J. **5** 264
 Konis, E., see Evenari, M.
 Koniuszy, F., see Folkers, K.
 Kono, H. **1** 153, **2** 286, **3** 252, **256**
 — and Inouye, M. **1** 152
 — and Sawamoto, T. **2** 122, **3** 253
 — and Sugihara, Y. **3** 257
 Kontos, **1** 198
 Kools, J. F. **3** 56
 Koon, C. M., and Keepers, C. H. **3** 141
 Koopman, M. J. F. **4** 50
 — and Verhoef, L. **1** 26
 Kopitke, J. C. **3** 157
 — see Wilde, S. A.
 Koresaer, J. **1** 41
 Koroleff, A. **1** 28, **2** 55, **224**, **3** 56, **140**, **225**, **4** 235
 Kormo, A. M. **3** 324
 Korstian, C. F., and Coile, T. S. **1** 29
 — and Ruggles, A. G. **3** 348
 — see Lynch, D. W.
 Korsuñ, F. **2** 76, **3** 85
 Koscinski, M. **4** 158
 Koskenmaa, E. J. **1** 51
 Kostler, J. **1**, **122**
 Kossoris, M. D., and McElroy, F. S. **4** 260
 Kotok, E. I. **3** 194
 Kotov, M. I. **4** 96
 Kotwal, E. K. **1** 302
 Kotze, J. J. **5** 229
 Kouba, T. F., see Chambers, E. L.
 — see Riker, A. J.
 Kovalenko, A. G., see Grachev, I. D.
 Kováts, L. **4** 45
 Kozhanchikov, I. V. **4** 133
 Kozlowski, A., and Chacharowska, H. **1** 297
 Kozlowski, T. T. **5** 164
 — and Schumacher, F. X. **5** 98
 Krahl-Urban, J. **3** 51, **296**
 Kramer, O. **5** 123
 Kramer, P. J. **3** 24, **5** 90, **163**, **165**
 — and Decker, J. P. **5** 90
 — and Wetmore, T. H. **5** 167
 — see Jester, J. R.
 Kramer, P. R. **1** 169
 — and Sturgeon, E. E. **4** 197
 Krammer **1** 18
 Krasnosselskaya, T. A., and Richter, A. A. **5** 92
 Krasnov, M. I. **1** 125
 Kräss, A. **1** 51
 Krauch, H. **1** 228, **257**, **258**, **267**, **269**, **2** 139, **161**, **223**, **4** 100, **102**, **128**
 Kratochvil, J., and Farský, O. **4** 252
 Krauss, G. **1** 53, **74**
 —, Miller, K., and Gartner, G. **3** 38
 Krausz, H. **4** 148
 Kreag, K. K. **2** 70, **322**
 Krebs, E., see Grossmann, H.
 Kreisinger, H. **4** 244
 Krenn, K. **3** 172, **260**, **4** 28
 Kress, H. **5** 263
 Kress, O., and Mosher, R. H. **5** 265
 — and Ratliff, F. T. **5** 264
 Kressman, F. W. **5** 264
 Krestinski, V. N., Kazeeva, E. V., and Komshilov, N. F. **4** 88
 —, Novak, A., and Komshilov, N. **2** 319
 Krieger, H. **3** 124
 Krijthe, N., and Went, J. C. **1** 240
 Krishna, S. and Ghose, T. P. **5** 194
 (2)
 — and Varma, B. S. **4** 183
 — see Puntambekar, S. V.
 Krishnan, E. K. **2** 199
 Krishnaswamy, K. **1** 83, **3** 114, **4** 157, **5** 9, **143**
 Kroeber, J. K. **2** 327
 Krogh, P. M. D. **5** 39
 — see Turnbull, J. M.
 Kroodsmas, R. F. **1** 259
 Krotkevich, P. G. **1** 252, **3** 217, **4** 23
 Kruber, J. K. **1** 146
 Krueger, M. E. **5** 208
 Krueger, T. **3** 353
 Kruger, W., see Hilpert, R. S.
 Krukoff, B. A. **1** 248, **4** 21, **5** 244
 Krupenikov, I. A. **2** 129
 Kruse, G. W., see Anderson, F. H.
 — see Fox, G. D.
 Krzeskiewicz, W. **1** 87
 Küch, W. **1** 184, **4** 174
 Kucheryavkh, E. G. **4** 29
 Kuenzel, J. G., and McGuire, J. R. **4** 29
 — see Emmer, R. E.
 — see Genaux, C.-M.
 — see Joranson, P. N.
 Kufferath, A. **2** 311
 Kügler, F. **3** 175, **4** 136
 Kuhlmann, J. G. **3** 116, **5** 22
 Kujala, V. **2** 289
 Kulash, W. M. **2** 239
 Kulikov, A. I. **5** 165
 Kulka, M., and Hibbert, H. **5** 183
 Kumar, L. S. S., Abraham, A., and Solomon, S. **4** 92
 — and Joshi, W. V. **5** 97
 Kumura, Z., see Simoda, I.
 Künanz, H. **3** 122, **301**
 Kuntara, W., see Grassmann, W.
 Kuppawami, V. S. **1** 197
 Kurashy, J. A. **4** 167
 Kurentsova, G. E. **5** 22
 Kürschner, K., and Schindler, F. **2** 10
 — and Wittenberger, K. **1** 276
 Kurtén, H. J. **1** 282
 Kushev, V. L. **4** 255
 Kuz'manenko, N. E. **2** 202
 Kvalnes, H. M. **5** 125
 — see Berliner, J. F. T.
 Kyaw Khine, C. **1** 302
 Kynoch, W. **2** 217
 — and Norton, N. A. **1** 40
 Kyrides, L. P. **3** 322
 LACK, D. **1** 249
 Lacombe, N. R., and Youngken, H. W. **5** 238
 La Cour, L. F., see Lewis, D.
 Ladefoged, K. **1** 157
 — see Bornebusch, C. H.
 Laessle, A. M. **5** 101
 Lafond, A., see Dansereau, P.
 La Forge, F. B., Haller, H. L., and Sullivan, W. N. **4** 121
 Lagasse, F. S., see Sell, H. M.
 Lagerberg, T. **4** 95
 Lagrimas, M. **1** 276
 — see Salvoza, F. M.
 Lahiri, J. K., and Ghosh, S. **4** 216
 Laidlaw, W. B. R. **3** 165, **4** 60
 Lain, A. E. **5** 186
 Laing, E. V. **1** 28
 Laird, D. G. **3** 182
 Lajugie de la Renaudie, R. **1** 146
 Lai, A. B. **4** 162, **5** 112
 Lamb, A. F. A. **2** 203, **3** 118, **332**, **4** 18, **5** 20
 Lamb, G. N. **1** 271
 Lamb, H., and Sleeth, B. **2** 246
 — see Davis, W. C.
 Lamb, S. H., see Robyns, W.
 Lambert, R. **3** 81, **343**, **5** 64
 Lamberts, O. **4** 138
 L'amkin, V. A., and Nemkin, A. S. **4** 44
 Lammerts, W. E. **4** 90
 Lamont, C. **1** 262
 LaMothe, G. E. **3** 227
 Lamp, I. **4** 37
 Lampadius, G. **3** 281
 Lampe, M. **2** 325
 Lampimäki, T. **5** 192
 Lancaster, P. C. **5** 105
 Landon, F. H. **2** 76, **3** 129
 Lane, F. G., see Pettet, A. E. J.
 Lane, R. D., and Liming, F. G. **1** 269
 Lane Poole, C. E., see Stoaite, T. N.
 Lang, A. **3** 179
 Lang, A. A. D., and Whyte, S. **3** 142
 Langdon, L. M. **2** 24, **5** 98
 Langford, G. S. **4** 187

AUTHORS INDEX

- Langlands, I. 1 42, 93, 2 48, 5 96
 — and Thomas, A. J. 2 87, 4 53, 120
 — see Barnard, M. M.
 — see Dadswell, H. E.
 Langlet, O. 2 16, 4 99, 5 16
 Langner, W. 1 137, 5 252
 Lángos, L. 3 227
 Langsaeter, A. 4 258, 5 31, 287
 — see Eide, E.
 Lanjouw, J. 3 294
 Langsigan, N. P. 1 284, 3 267
 — see Cruz, E. de la
 Lansing, L. 2 72
 Lantelmé 1 236
 Lantion, D. C. 1 38
 Lantz, A. E. 1 267
 Lanz, C. 4 119
 Lapasse, L. de 2 33
 Lappi-Seppälä, M. 1 32, 5 287
 Large, J. R. 5 281
 Larner, E. E., see Richardson, N. A.
 Laroque, G. L., and Maass, O. 3 59
 Larsen, C. M. 2 53
 Larsen, C. S., see Gram, K.
 Larsen, E. L. 4 222
 Larsen, J. A. 2 25
 — and Dilworth, J. R. 4 83
 — and Stump, W. G. 1 132
 Larsen, P. 5 257
 Larson, R., see Häggglund, E.
 Lashkevich, K. A. 1 248
 Lasser, T. 4 223
 László, T. 29
 Lataste, A. 4 27
 Latham, D. H., see Davis, W. C.
 — see Gravatt, A. R.
 Latham, J. 4 33
 Lathrop, C. H. 3 243
 Lathrop, W. W. 3 57
 Latour, H. J. 4 101
 Laudencia, C. M. 1 299
 Lauer, B. E. 5 121
 Laughton, F. S. 1 37, 4 197
 Laurie, M. V. 1 21, 40, 88, 196, 302,
 2 211, 296, 299, 320, 3 210
 — and Griffith, A. L. 4 165
 — and Ram, B. S. 2 331
 — and Sen Gupta, J. N. 3 239
 Lautsch, W. 3 311
 — and Piazzolo, G. 2 302
 — see Freudenberg, K.
 Lava, V. G., see Alejo, L. G.
 Lawrence, A. O. 1 159
 Lawrence, D. B. 1 84
 Lawson, F. R., Fox, D. E., and
 Cook, W. C. 4 224
 Lawson, H. K. 4 125
 Lay, D. W. 4 136
 — and Taylor, W. P. 5 108
 Leach, J. G. 2 21, 3 80
 — Hodson, A. C., Chilton, St. J. P.,
 and Christensen, C. M. 2 21
 — and Rupert, J. A. 4 191, 5 61
 — and Valteau, W. D. 2 18
 Leach, M. C. 3 177
 Leach, R. 2 72
 Leach, W. 2 225
 Leach, W. G. 4 114
 LeBarron, R. K. 3 211, 5 179
 — and Eyre, F. H. 1 87
 — and Neetzel, J. R. 4 215
 Le Barron, R. F., and Swayne, A. P.
 2 319
 Lechner, R. 3 142
 LeClair, W. J. 4 120 (2)
 Ledebor, M. S. J. 2 192
 Lee, H. C. 3 158
 Lee, H. E. 5 9
 Lee, J. A. 2 226
 Lees, P. M. 4 213
 Leete, B. E. 1 186
 Leeuwen, W. van 3 288
 Lefebvre, V., and Douglas, A. H.
 4 117
 — Etridge, J. J., and Himsworth,
 F. R. 3 62
 Leggatt, C. W. 1 123
 Legrand, C. D. 3 115
 Lehmann, E., and Eisenhuth, F.
 1 174
 Lehonkoski, N. A. 2 30
 Lehotsky, K. 3 288
 Lehrbas, M. M., and Eldredge, I. F.
 3 18
 Lehtinen, E. 2 152
 Leibundgut, H. 3 354
 — and Frick, L. 5 279
 Lely, W. G. 3 55
 Lembecke, L. W. 1 293
 Lemesle, R. 5 90
 Lemme, G. 3 32
 Lemmel, H. 1 158
 Lemmon, P. E., see Miller, H. W.
 Lempelius 4 48
 Lentz, G. H. 3 210
 Leon, D. de 2 22
 Leonard, E. C., see Allard, H. A.
 Leone, G. 4 229
 Leone, P., see Giordani, M.
 Lepage, H. S. 4 194
 Lepik, E. 2 21
 Leplae, E. 1 14
 Lesselbaum, H. R., see Worley, C. L.
 Le Sueur, A. D. C. 4 245, 5 143
 Letkovski, A. I. 3 288
 Leutenberger, G. 4 120
 Leutritz, J. 1 287
 Leván, A., see Jensen, H.
 Lever, R. J. A. W. 4 110, 5 204
 Lévesque, J. 5 271
 Levi, I., see West, E.
 Levi, C. G. 2 321
 Levin, N. A. 1 135
 Levisohn, I., see Rayner, M. C.
 Levitt, J. 4 245
 — and Siminovitich, D. 2 292, 3 40
 Levón, M. 1 287
 Lewenstein, A. S. 3 59
 Lewis, A. J. 5 48
 Lewis, D., and La Cour, L. F. 5 235
 Lewis, E. A. 1 109
 Lewis, H., see Epling, C.
 Lewis, H. C. 4 238
 Lewis, H. F., see Brookbank, E. B.
 — see Hay, K. D.
 Lewis, R. G., see Coats, R. H.
 Lexen, B. [R.] 1 92, 269, 3 259, 4
 257, 5 204, 287
 — and Peterson, G. 1 299
 — see Howell, J.
 Li, H.-L. 5 169, 172, 240
 Li, Y.-C. 2 296
 Libby, C. E., see Studeny, J.
 Libby, J. A. 3 267
 — see Knapp, K. H.
 Liebster, G. 2 136
 Liefeld, T. A. 1 177, 3 154, 328, 4 122
 Lief, M., see Elmendorf, A.
 Liénard, U. G. 2 67
 Liepiņš, R., see Kalniņš, A.
 Liese 1 238
 Liese, J. 3 108, 4 184, 239
 — and Schubert, R. 4 42
 Ligon, W. S. 2 69
 — see Gibbs, J. A.
 Lihnell, D. 2 11, 3 249, 5 11, 277
 Lihtonen, V. 5 290
 Lima, G. de A. 4 21
 Limaye, V. D. 1 49, 275, 2 48, 50,
 3 307, 329, 4 48, 49, 120, 168, 171,
 182, 244, 5 40, 58, 115, 128, 135,
 191
 — and Sultan Mohammed 5 35
 Liming, F. G. 2 24, 3 305, 4 23
 — and Seizert, B. F. 5 28
 — see Attridge, J. M.
 — see Lane, R. D.
 Limstrom, G. A., see Stoeckeler,
 J. H.
 Linck 2 68
 Lindberg, G., see Melin, E.
 Lindberg, K. 1 226
 Lindblad, E., and Lundberg, H. A.
 5 126
 Linden, A. van der 4 45
 Lindgren, R. M. 2 228, 3 323, 4 171
 — and Scheffer, T. C. 1 288, 2 145
 Lindh, A. G. 3 73, 336
 Lindman, K. 3 63
 Lindner, E. 2 29
 Lindquist, B. 1 131, 2 16, 5 88, 160,
 177
 — and Runquist, E. 5 238
 Lindsley, D. L. 2 230
 Linekin, M. G., Whalen, T. F.,
 Sutherland, J. W., Farrell, F. J.,
 Fearon, B. H., and Simpson, J. H.
 5 69
 Linn, T. H., see Wood, A. D.
 Linnames, O. 2 277, 5 229
 — and Rautvauri, E. 5 292
 Linsley, E. G. 5 65, 117, 173, 184
 Linteau, A. 2 333
 Lintner, B., and Ungváry, J. 3 147
 Linton, G. M., see Johnson, L. P. V.
 Liozin, M. F., and Vyacheslovskaya,
 D. I. 5 90
 Lipa, O. L. 4 98
 List, H. 4 48
 Lister, D. A. 5 52
 Lister, P. B. 3 73
 — see Humphrey, R. R.
 Little, E. L. 1 237, 248, 2 155, 306,
 3 237, 5 54, 105, 172, 229
 Little, E. M., see Shallenberger,
 G. D.
 Little, E. S. 3 107
 Little, S. 2 288, 3 208
 Littlefield, E. W. 1 234, 256, 258,
 2 39, 77, 3 303, 4 131, 161, 5 179
 — and Eliason, E. J. 1 37
 — see York, H. H.
 Liu, F.-Y., see Kaufmann, H. P.

AUTHORS INDEX

- Lloyd, D. J. 3 66
 Lochmüller-Kerler, E., *see* Jayme, G.
 Lockard, C. R. 5 73
 Locke, S. S. 4 197
 Lockie, J. R., *see* Collier, F. S.
 Lockwood, G. E. 4 12
 Lodewick, J. E. 2 291, 3 358, 4 235, 5 210
 Loebel, M. 4 101
 — *see* Rohmeder, E.
 Lofdahl, L. J., *see* Harris, E. E.
 Lofgren, E., and Champagne, J. 5 42
 Løfving, E. C. L. 1 265
 Logginov, B. I. 2 216
 —, Lohman, M. L., and Cash, E. K. 2 193
 Lohman, M. L., Cash, E. L., and Davidson, R. W. 5 60
 — and Watson, A. J. 5 278
 Lohmeyer 5 259
 Lohwag, K. 3 312, 5 275, 279
 Lokhov, V. P. 1 133
 Lombardo, A., *see* González, M.
 Lomberg, B. R., *see* Bowen, J. W.
 Lommatzsch, H. 3 308
 Long, A. 5 40
 Long, H. D. 2 34
 Long, H. K. 5 255
 Long, W. H. 2 18, 3 222
 — and Gooding, L. N. 2 284
 Looby, W. J., and Doyle, J. 4 221
 Look, E. E. M. 2 239
 Loomis, H. F. 4 227
 Lopez, M. 1 34
 Lopotko, V. A. 2 47
 Lorenz, R. C. 2 292
 — and Christensen, C. M. 1 189
 — and Davidson, R. W. 2 18
 — *see* Davidson, R. W.
 — *see* Secrest, H. C.
 Lorenzen, C. 1 103
 Loseby, P. J. A. 2 57, 65
 — and Merwe, C. C. van der 5 49
 — *see* Wyk, J. H. van
 Losee, S. T. B. 4 259
 Lotbinière, H. G. J. de 4 66
 Lothigius, W. 1 101, 289, 2 233, 3 237, 5 230
 Lotti, T., and Evans, T. C. 5 157
 Loubière, A. 2 109, 110
 Loucaides, T. C. 4 65
 Loughborough, W. K. 2 228, 5 43, 119, 263
 — *see* Hill, D. F.
 Loughhead, H. J., *see* Kittredge, J.
 Loukashkin, A. S. 2 202
 Lourteig, A. 5 24
 Louttit, J. E. 5 135
 Louvel, J. 74
 Lovász, P. 2 202
 Lovis 3 57
 Lowden, M. S. 3 337
 Lowe, J. N. 3 178
 Lower, A. R. M. 1 207
 Loycke, H. J. 1 50, 4 12, 50
 Lubiz, N., *see* Paterson, A.
 Lubisch, H. 3 43
 Lubyako, M. N. 4 90
 Lucas, A. 4 184
 Lucas, J. E., *see* Benson, H. K.
 Luckhoff, H. A. 5 239
 Ludbrook, A. J. 4 245
 Ludbrook, W. V. 2 284, 322, 4 224, 5 89
 — and White, N. H. 2 285
 Ludi, W. 3 15, 4 18
 Ludtke, M. 5 37
 Luebke, B. H., *see* Milk, R. G.
 Lufburrow, B. M. 2 156
 Lugg, J. W. H., and Weller, R. A. 5 193
 Lugovoy, M. 2 46
 Lukkala, O. J. 2 321, 5 232
 Lumsden, G. Q., and Hearn, A. H. 4 178
 — and Whyland, W. P. 1 299
 Luncz, G. 5 288
 Lund, A., *see* Jørgensen, C. A.
 Lund, A. P., and Sandstrom, W. M. 5 234
 Lund, H. 5 122
 Lundberg, G. 1 176
 Lundberg, H. 5 51
 Lundberg, H. A., *see* Lindblad, E.
 Lundell, C. L. 2 290, 3 206, 4 158, 159, 5 10, 18, 23, 173
 — and others 4 17, 5 169
 Lunt, H. A. 1 263, 2 79, 3 282, 4 85, 150
 Lussier, O. 3 90
 Lüthje, H., and Steinert, J. 4 45
 Luttrell, A. 5 109
 Luttrell, E. S. 3 77, 78
 Lütty, W. 3 228, 4 112, 5 119
 Lützt, H. 4 242
 Lütz, H. J. 2 32, 280, 3 282, 4 246
 — and Griswold, F. S. 4 84
 Lutz, L. 1 98, 5 184, 259
 Luxford, R. F., *see* Hepting, G. H.
 — *see* Scheffer, T. C.
 Lyamin, V. A. 5 126
 Lyford, W. H. 4 86, 5 88
 Lyman, R. R., and Ostrom, C. E. 5 176
 Lynch, D. W., Davis, W. C., Roof, L. R., and Korstian, C. F. 5 111
 — and Schumacher, F. X. 3 42
 Lynch, S. J., and Wolfe, H. S. 5 23
 Lynn, G. W. 4 196
 Lyon, C. J. 3 86, 174, 4 258
 Lyon, E. D. 2 63
 Lyon, H. 3 356
 Lyons, R. W. 4 200
 Lysaght, J. F. 2 78
 Ma, R., *see* Robbins, W. J.
 Maass, A. 1 105
 Maass, A. L., *see* Gouwentak, C. A.
 Maas, O., *see* Beazley, W. B.
 — *see* Larocque, G. L.
 Mabesa, C. 1 281
 — and Ruiz, Q. 3 327
 McAllister, J. V. 4 37
 McAloney, H. J., *see* Secrest, H. C.
 MacAndrews, A. H. 2 195
 MacBean, A. P. 3 121
 McCaffrey, J. E. 4 64
 McCall, M. A., Silcox, F. A., Myer, D. S., and Wallace, H. A. 1 255
 McCallum, A. W. 5 71
 — *see* Connors, I. L.
 — *see* Heimburger, C. C.
 McCarthy, E. F. 1 268
 McCarthy, J. L. 4 43, 48
 — *see* Godard, H. P.
 — *see* Peniston, Q. P.
 McClennen, F. H. 1 256
 McClintock, K. B., *see* Beal, J. A.
 McClintock, J. A., *see* Butterfield, N. W.
 — *see* Winklepleck, R. L.
 McClure, H. E. 5 18
 McComb, A. L. 1 16, 5 87
 — and Kapel, F. J. 2 12, 4 23
 — and Sassi, J. E. 5 160
 — *see* Melvin, J. K.
 McComb, F., and Munger, T. T. 2 294
 McConnel, S. 3 334
 McCord, P. P. 4 187
 McCormick, F. A. 2 20
 McCormick, L. E., and Bowen, C. M. 5 185
 McCoy, S. 1 246
 McCulloch, W. F. 1 73, 4 136, 225, 236, 5 14, 136, 212
 McDaniel, E. I. 1 105, 298, 2 159, 3 166, 344
 McDaniels, E. H., *see* De Vries, W.
 MacDermot, J. G. 5 119
 McDermott, J. J. 3 198, 199
 MacDonald, F. 3 327
 MacDonald, J. 1 124
 MacDonald, J. A. 1 85
 MacDonald, K. M., *see* Sedgewick, K. G.
 MacDonald, K. R. 3 332, 5 253
 McDonald, T. 2 181
 McDonnell, A. D., *see* Dunlap, A. A.
 MacDougall, D. T. 1 234
 McDunnough, J. 5 107
 McElderry, J. C. K. 4 198
 McElhanney, T. A. 2 260
 McElroy, F. S., *see* Kossoris, M. D.
 McEwen, C. W. 4 138
 McEwen, P. 2 157, 5 71
 McFarland, F. T. 4 223
 McFee, R. E. 4 236
 MacGillivray, J. C. 5 156
 McGookin, A., Robertson, A., and Whalley, W. B. 2 143
 McGovern, J. N., and Chidester, G. H. 2 149, 4 39, 40, 237
 — and Keller, E. L. 5 122 (2)
 McGowan, J. C. 5 235
 — *see* Campbell, W. G.
 McGowin, J. F. 4 137
 McGraw, C. F., and Davidson, J. B. 4 138
 MacGregor, W. D. 3 100, 4 200
 MacGregor, W. S., *see* West, E.
 McGuffin, W. C., *see* Brown, A. W. A.
 McGuire, J. R., *see* Condit, G. R.
 — *see* Kuenzel, J. G.
 McGuire, K. 4 111
 Machado, A. A. de S. 5 272
 McIlvain, Z. E., *see* Rogers, E. G.
 McInnes, A. S., *see* West, E.
 McInnis, R. J., *see* McMichael, C.
 McInter, B. B. 4 219
 McIntosh, D. 3 299
 McIntyre, A. C. 4 260

AUTHORS INDEX

- McIntyre, H. L. **1** 294, **4** 248, 254
— *see* Potts, S. F.
— *see* Potts, R. N. **4** 187
McIntyre, T. M. **3** 181
Mack, G. L., *see* Hamilton, J. M.
McKay, D. F., *see* Kolbe, E. L.
McKay, H. H., *see* McKay, J. W.
Mackay, J. H. **2** 140, 225, **3** 114, 101,
330, **4** 152, 182, 183, **5** 89
McKay, J. W. **3** 199, **5** 284
— and McKay, H. H. **4** 17
MacKay, M. R. **5** 284
McKean, H. B. **2** 219
McKee, M., and Birch, T. C. **3** 283
McKee, R. H. **5** 165, 188
McKeever, D. G. **5** 110
McKellar, A. D. **3** 302, **4** 245
McKenna, G. F., *see* Hartzell, A.
McKenzie, H. L. **3** 167, **4** 193, 252
McKenzie, M. A. **4** 171, 190, **5** 198
— and Johnson, E. M. **2** 327
Mackin, J. H., *see* Hansen, H. P.
Mackinley, W. H. **4** 112
MacKinney, A. L., and Chaiken,
L. E. **1** 298
— *see* McQuilkin, W. E.
McKinnon, A. D. **3** 285, 350
McKinnon, F. S. **2** 34, **5** 145
Mackney, A. W. **3** 53
McLane, S. R., *see* Haseman, L.
McLaughlin, W. T., and Brown,
R. L. **5** 89
MacLean, J. D. **2** 219, **3** 325, **4** 177,
5 114, 258
MacLellan, M. E., *see* Coats, R. H.
MacLeod, A., and Chandler, J. **2**
255
McLintock, T. F. **2** 217, 299, **3** 123,
4 164
McMahon, W., Hill, C. M., Koch,
F. C. **4** 177
McMichael, C., and McInnis, R. J.
2 58
McMillen, J. M., Gortner, R. A.,
Schmitz, H., and Bailey, A. J. **1**
284
McNair, J. B. **4** 233
McNair, J. J., and Jahn, E. C. **5** 258
McNally, J. A. **2** 54
MacNamara, C. **5** 270
McNaughton, G. C. **5** 125
— and Harrison, C. A. **3** 224
— and Martin, T. J. **2** 305
McNeil, C. **3** 178
McNeil, D. J. **2** 54
McNeill, F. A., *see* Johnson, R. A.
McNeill, W. M. **1** 199
McNew, G. L., *see* Gilman, J. C.
Mackney, A. W. **2** 302
— *see* Cohen, W. E.
Macon, J. W. **5** 157
— and Gevorkiantz, S. R. **4** 195
MacQueen, I. C. **4** 125
McQuilkin, W. E. **1** 266, **2** 138, 209
— and MacKinney, A. L. **1** 35
Macrae, R., *see* Mounce, I.
McVaugh, R. **5** 23, 100
McVeigh, I., *see* Burkholder, P. R.
McWhorter, F. P., *see* Milbrath,
J. A.
McWilliams, H. G. **2** 214
Madarang, S. A. **3** 341
Madueño, R. R. **2** 87
Maggrett, H. I. **3** 335
Magrou, J. **1** 130
Magyar, J. **3** 87
Maher, C. **1** 133
Maheux, G. **2** 195, **3** 347
Mainzhausen, L. **1** 229
Maissurow, D. K. **1** 258, **3** 33
Maize, E. R., Scheffer, T. C., and
Greenwald, H. P. **3** 312
Majumdar, G. P. **1** 171, **5** 22, 92
Makhotin, A. **3** 206
Maki, T. E. **2** 37
— *see* Gemmer, E. W.
Makins, F. K. **4** 102
Mălăescu, A. **2** 236
Malan, C. E. **1** 131
Malevskaya, S. S. **3** 154
Malianov, A. P. **1** 229
Malikov, K. V. **4** 45
Mallet, J. **1** 264
Mallonga, A. C. **3** 246
Malmström, C. **5** 12
Malmy, M., and Bouvet, P. **5** 259
Maloney, M. M. **4** 218
Malz, A. **4** 114
Mamet, R., and Durocher-Yvon, F.
4 234
Manahan, M. D. **4** 64
Manalo, T. J. **1** 53
Manis, W. E., *see* Baxter, D. V.
Mann, L. C. **4** 201
Manning, D. E. B. **3** 288, 351
Manning, E. C. **3** 88
Manning, J. D. **4** 132
Manning, W. E. **3** 30, **5** 98
Mantel, W. **1** 55, 123, **2** 80, **3** 354,
4 64
Manzoni, G. **2** 24
Marán, B. **1** 19, **2** 41, **3** 20
— *see* Némec, A.
Marañón, J., and Gonzales, C. **3** 154
Marcelin, P. **2** 7
Marchal, E., and Mayné, R. 188
Marckworth, G. D. **5** 40, 145
Marco, H. F. **1** 145
Marcu, O. **1** 153
Marcus, B. A. **4** 252
Marian, S. **4** 118
Marion, L., *see* Garland, H.
Mariani, G. **1** 253
Marks, J. B. **4** 95
Markwardt, L. J. **5** 115
— and Freas, A. D. **4** 174
— and Heck, G. E. **1** 12
Marquis, R. W. **1** 110, **5** 157
— *see* Sowder, A. M.
Marr, H. V. **3** 331
Marra, G. G. **5** 262
Marrero, J. **4** 27, 164, **5** 110
Marriott, C. **4** 102, 226, 257
Marriott, I. C. **2** 255, **3** 306
Marsh, E. K. **2** 27
Marsh, F. L. **3** 254
Marsh, R. E., and Gibbons, W. H.
4 262
Marsh, S. H. **3** 336
Marshall, Sir G. A. K. **2** 292, **4** 60
Marshall, J. C. K. **1** 96
Marshall, J. H., *see* Johnson, V. W.
Marshall, R. C. **2** 84, **3** 307
Marshall, R. P. **2** 245, **4** 167
Marshall, T. J., *see* Penman, F.
Marshalleck, B., *see* Mayer-Wegelin,
H.
Martelli-Chautard, M. **1** 303
Marten, E. A., and Pohlman, G. G.
4 214
Marth, P. C., and Gardner, F. E. **3**
196
Martin, C. H. **2** 53
Martin, C. S. **1** 194, **2** 183, **3** 91, 177
Martin, D. **2** 200
Martin, G. **5** 133, 195, 272
Martin, H. **2** 258
Martin, J. D. **2** 125
Martin, J. F. **1** 194, **2** 326
— and Gravatt, G. F. **4** 248
Martin, J. J. E. **1** 85
Martin, J. S., and Bray, M. W. **3** 60,
319, **4** 40, 175, **5** 265
—, Bray, M. W., and Schwartz,
S. L. **1** 284, **2** 58, **4** 39
Martin, J. T., *see* Tattersfield, F.
Martin, J. V. **4** 40
Martin, R. W. **4** 123, **5** 52, 131
Martin, T. F. **1** 188
Martin, T. J., *see* McNaughton,
G. C.
Martineau, R. **5** 107
Martinez, I. R. **1** 305
Martínez, J. B. **4** 116, 189
Martínez, J. G. **1** 123
Martínez, M. **2** 201, **4** 158, **5** 21, 23,
243
Martland, J. G., *see* Harrar, J. G.
Martorell, L. F. **1** 297, **2** 122, **3** 82,
169, **5** 200
— *see* Wolcott, G. N.
Marx, D. S. **2** 218
Mason, E. G. **5** 20
Mason, H. L. **4** 95
Mason, L. **1** 287
Mason, M. S., *see* Segelken, J. G.
Mason, W. H., and Boehm, R. M.
5 121
—, Boehm, R. M., and Simpson,
G. G. **5** 264
Massey, C. L., *see* Beal, J. A.
Mat, I. S. **1** 151
Matagrin, A. **5** 116
Matèju, K. **2** 78
Mather, K. **4** 211
Mathers, W. G. **3** 168
— and Olds, H. F. **3** 253
Mathewson, J. S. **1** 182, **2** 151
Mathieson, A. **1** 108
Mathur, R. N. **4** 160
Matthew, L. S., *see* Engstrom, H. E.
Matthew, O. V. **4** 158
Matthews, D. M. **1** 281, 302, **3** 226,
4 172
Matthews, D. N. **1** 294, **2** 158, **3** 158
— and Morris, W. G. **4** 125, 246, **5**
59
Matthews, J. R. **1** 84
Matthews, T. M., *see* Worley, C. L.
Mattoon, H. G. **2** 329, **3** 75
Mattoon, M. A. **3** 355
Mattoon, W. R. **1** 248, **2** 83, **3** 292,
353, **4** 104

AUTHORS INDEX

- Mattoon, W. R., and Barrows, W. B. 4 257
— see Phillips, G. R.
Mattsson-Mårn, L., and Nenzell, G. 5 278
Matyakin, G. I. 2 38
Matyuk, I. S. 2 110, 4 195
Matzke, E. B., and Hulbary, R. L. 5 34
Maugham-Brown, H. 5 147
Maxon, M. A., Pickett, B. S., and Richey, H. W. 3 201
Maxwell, H. A., see Morehead, F. T.
May, C. 3 164, 4 154, 249
— Walter, J. M., and Mook, P. V. 2 193, 3 158
— see Buchanan, W. D.
— see Kelsheimer, E. G.
— see Walter, J. M.
May, P. G., see Garver, H. L.
May, V. 3 338
May, W. D., and Frahm, E. E. 5 193
Mayall, K. M. 3 122
Mayer, A. 4 133
Mayer-Wegelin, H. 4 13
— and Berkel, A. 4 105
—, Marshalleck, B., Gelinsky, H., and Junack, H. 1 45
Mayfield, A. G. K., see Hocking, G. H.
Mayfield, P. 4 50
Mayné, R., see Marchal, E.
Mayor, E. 3 160
Mazal, E., see Belavsky, E.
Maze, W. H., see Holmes, M.
Mazodier, B. 1 111
Mazurak, A., see Kittredge, J.
Meadley, G. R. W. 4 28
Meagher, G. S. 3 222, 5 175
Medal, C. K., see Štastný, J.
Mednikov, F. A., see Smirov, D. N.
Meginnis, H. G. 1 37, 186, 265, 2 43
Meier, W. 4 175
Meiler, J. G. 5 46
Melin, E., and Lindberg, G. 1 130
— and Norkrans, B. 4 85
Melis, A. 2 329
Mell, C. D. 2 45
Mellecker, J. B., and Baker, M. W. 4 178
Melton, W. R. 4 264
Melville, R. 1 150, 248, 2 15, 3 295, 5 243
— Wokes, F., and Organ, G. J. 5 193
Melvin, J. K., and McComb, A. L. 4 14
Mendoza, D. R. 1 151, 3 203
— and Germise, F. D. 2 238
Menger, A. 4 112
Mercier, T. 2 254
Merendi, A. 1 109
Merkel, F. 3 148
Merkel, E., and Klein-Krauthaim, F. 3 165
Merkle, F. G., see Alderfer, R. B.
Merrill, E. D. 2 126, 3 292, 4 96
— and Chen, L. 5 105, 172
— and Perry, L. M. 1 149, 2 27, 126, 291, 3 37, 116, 4 20, 21, 97, 223, 5 107, 244
Merrill, S., see Sharpe, R. H.
Merritt, R. W., and White, A. A. 5 126
Merten 1 54
Merwe, C. C. van der, see Loseby, P. J. A.
Mesa, A. de 1 95, 3 89
Mesa de Romero, M. A., see González, M.
Mesavage, C. 3 181, 4 257
— see Forbes, R. D.
Messori, A. 2 124
— and Pecciarini, A. M. 3 308
Metcalf, F. P. 3 116, 4 222
Metcalf, W. 4 243
— and Waltz, R. S. 3 153
Metcalf, C. R., and Templeman, W. G. 1 262
Metcalf, G. 1 244, 3 78, 249
Metz, L. 4 240
— and Seekamp, H. 3 139, 4 179
Meuli, L. J., see Shirley, H. L.
Meurice, R., and Cartiaux, J. 2 113
Meurman, O., and Pohjanheimo, O. 5 14
Meusel, H. 4 94
Meyer, H. A. 1 304, 2 162, 3 86, 260, 4 83, 5 10, 68, 144
— see Stevenson, D. D.
— see Youorski, J.
Meyer, J. 1 245, 3 178
— see Hesmer, H.
Meyer, K. A. 3 96, 334, 4 81
Meyer, P. 4 213
Meyer, T. M., see Hulssen, C. J. van
Meyer, W. H. 1 54, 2 139, 4 259, 5 287
Mezera, A. 1 82
Miao, C. P. 1 154, 2 29, 3 169, 345
Michel, E. 4 224
Michelangeli, M. 3 98
Michelmores, A. P. G. 1 148
Middleton, A. D. 3 81
Midgley, A. R., and Dunklee, D. E. 3 157
Miedler, K. 4 39
Miedler, K. A., and Prütz, G. 4 33
Mielke, J. L. 4 126
— and Kimmey, J. W. 4 186, 245
Migita, N. 2 226
Mihalyi, Z. 1 109
Mijers, W. N. 3 303, 4 227
Mikhaylov, N. 1 224
Mikheev, S. D. 1 160
Mikola, P. 5 235, 274
Mikyška, R. 2 25
Milanez, F. R. 1 93, 272, 2 141, 4 107
Milbrath, J. A. 2 122, 193
— and McWhorter, F. P. 4 190
— see Tucker, C. M.
Miles, C. 3 261
Milk, R. G., and Luebke, B. H. 5 214
Millan, T. 5 120
Millar, J. B. 1 160, 2 34
Mille, L. 5 105
Miller, C. I. 2 211, 5 84
Miller, D. 1 14, 3 295
Miller, E. W. 5 109
Miller, F. E., see Dowden, P. B.
Miller, F. L., see Morway, A. J.
Miller, G. L. 3 88, 4 187
Miller, H. W., and Lemmon, P. E. 5 252
Miller, J. C., see Kimbrough, W. D.
Miller, J. K. 5 60
Miller, J. M., Salman, K. A., and Johnson, P. C. 3 344
Miller, N. C. E. 3 55
Miller, O. B. 1 226, 3 189
Miller, P. A. 3 249, 4 57, 191, 5 59, 279, 280
— and Roewekamp, F. W. 5 196
Miller, P. W. 3 342
— Bollen, W. B., Simmons, J. E., Gross, H. N., and Barss, H. P. 2 192
Miller, R. H. 3 173
Miller, R. P. 5 39
Miller, R. W., see Graff, J. H.
Miller, T. A. H. 2 241
Miller, W. A. 3 56
Miller, W. G. 4 262
Millet, A. 1 48
Millett, M. A., see Stamm, A. J.
Millett, M. R. O., see Fielding, J. M.
Millot, R. 4 181, 5 268
Mills, L. E. 5 266
Milne, G. 3 19
Milne, M. A. 5 247
— and Gerling, J. 4 103
Minami, T., and Kawauti, A. 3 150
Minckler, L. S. 1 81, 137, 300, 2 32, 209, 3 41, 123, 129, 303, 4 90, 5 25, 247
Mintcheff, B. 1 199
Miranda, J. 1 47
Mirchandani, T. K. 3 19, 304
Mirov, N. T. 2 293, 3 107, 4 221, 5 92
— and Stockwell, W. P. 1 256
Misra, P. 1 272, 5 181
— see Allsopp, A.
Mitchell, G. F. 5 230
Mitchell, H. C. 5 145
Mitchell, H. L. 1 77, 90
— and Chandler, R. F. 1 251
— and Rosendahl, R. O. 1 75
—, Schopmeyer, C. S., and Dorman, K. W. 5 131
Mitchell, J. 2 220
— and Moss, H. C. 5 149
Mitchell, J. A. 3 338
Mitchell, J. E. M. 1 33
Mitchell, J. N. 3 262
Mitchell, J. W., and Rice, R. R. 5 91
Mitchell, R. L., and Ritter, G. J. 2 302
— see Harris, E. E.
Mitono, T. 3 83, 84
Mitscherlich, G. 2 78, 3 118, 4 186, 213
Mittleman, E., and Stephen, J. L. 3 326
Miura, A., and Kitano, S. 1 284
— and Nakatuka, T. 2 149
Miyama, R., see Nisida, K.
Moats, R. W. 3 22
Mobbs, E. C. 3 96
Mobius, M. A. 1 161
Modess, O. 1 130, 4 214
Moessner, K. E. 1 293, 2 72
Mohammad, S. 5 51, 191
— see Rehman, M. A.

AUTHORS INDEX

- Mohan, N. P. **1** 258, **3** 293, **5** 29, **54**
 Mohr, E. C. J. **1** 20
 Moiseev, A. E. **2** 76
 Moiseeva, M. [N.] **2** 46, **4** 17
 Molchanov, A. A., *see* Alekseev, C. V.
 Molcsany, G. v. **4** 103
 Moldenhawer, K. **1** 166
 Moldenke, H. N. **3** 117, **206**, **294**, **295**, **4** 157, **5** 105
 Moldovanu, I. **1** 45
 Molestina, O. E. **5** 10
 Molin, A. **3** 150
 Molina Garcés, C. **4** 123
 Moll, F. **1** 98, **4** 41, **171**
 Möll, H. **5** 51
 — *see* Bauer, K. H.
 Möller, C. M. **1** 294, **5** 247
 Monachino, J. **3** 32, **37**, **5** 171
 Monroe, A. F. **5** 208, **290**
 Monsanto, L. E. **1** 73
 Montanelli, L. G. **1** 159
 Montgomery, P. H. **1** 206
 Montonna, R. E., and Cornell, L. W. **5** 122
 Mook, P. V. **2** 193, **4** 127
 — and Wolfenbarger, D. O. **5** 66
 — *see* May, C.
 — *see* Walter, J. M.
 Moon, D. G. **3** 59, **4** 183
 Mooney, H. F. **1** 24, **4** 94, **219**, **5** 168
 Moor, H. W. **1** 108, **3** 183
 Moor, M. **3** 292
 Moore, A. G. T. **2** 183
 Moore, A. W. **3** 251
 Moore, C. G., and Zucker, M. **3** 61
 Moore, D. **4** 45, **46**
 Moore, E. B. **2** 80, **85**, **4** 140, **259**, **5** 205
 — and Waldron, A. F. **2** 250, **3** 87
 Moore, G. E. **5** 29
 — and Harkom, J. F. **4** 41
 Moore, L. B. **2** 127
 Moore, O. C., *see* Basore, C. A.
 Moorhouse, R. B. **2** 33, **34**
 Moorhouse, S. **1** 127
 Morais, A. T. de **3** 203
 Morais, L., *see* Pomerleau, R.
 Mörrath, E. **1** 97, **2** 62
 Moravets, F. L. **2** 111, **3** 100
 — *see* Cowlin, R. W.
 Morehead, F. T., and Maxwell, H. A. **2** 80
 Morey, H. F. **1** 122, **4** 154
 Morgan, M. F. **2** 185, **4** 84
 Morison, M. B. **1** 14
 Mork, E. **4** 134, **5** 26, **161**, **253**
 Morley, A., *see* Colquhoun, M. K.
 Morley, P. M. **2** 223, **3** 145
 Morozov, A. V. **3** 98
 Morrill, G. E., *see* Duerr, W. A.
 Morris, P. F. **5** 234
 Morris, R. F. **5** 64, **141**
 Morris, W. G. **1** 293, **2** 157, **3** 158, **242**, **243**, **336**, **4** 125
 — *see* Matthews, D. N.
 — *see* Munger, T. T.
 Morris, W. M. **4** 227
 Morris, W. S. **5** 118
 Morrison, F. R., *see* Penfold, A. R.
 Morriss, D. J. **3** 159
 Mortensen, R. **3** 46
 Mortimer, M. F. **3** 254
 Morton, C. V. **5** 21
 Morway, A. J., and Miller, F. L. **5** 48
 Moseley, E. L. **4** 258
 Moser, H. C., *see* Cunningham, R. N.
 Moser, W. **4** 201
 Moses, C. S., and Hoffmann, C. H. **2** 194
 — *see* Henry, B. W.
 — *see* Hoffmann, C. H.
 — *see* Jones, T. H.
 Mosher, P. R., *see* Borglin, J. N.
 — *see* Kress, O.
 Moshkov, B. S. **1** 155, **2** 191
 — and Kocherzhenko, I. E. **1** 235
 Mosimann, H., and Svedberg, T. **5** 37
 Moss, A. E. **2** 118
 — *see* Wallace, R. H.
 Moss, H. C., *see* Mitchell, J.
 Moss, V. D., *see* Davis, K. P.
 Mothes, K., *see* Breitenfeld, E.
 Mottet, A., *see* Hill, D. F.
 Mottet, A. L. **2** 143, **4** 49, **118**, **180**
 — *see* Grondal, B. L.
 Mottishaw, J. S. **4** 138
 Mounce, I., Bier, J. E., and Nobles, M. K. **2** 285
 — and Macrae, R. **1** 149
 Mourashkinsky, K. E. **1** 248, **2** 191
 Mousseron, M., Granger, R., and Ronayroux, M. **1** 184
 Mouzon, O. T. **3** 319
 Movchan, S. D., *see* Yakimov, P. A.
 Mowat, E. L. **2** 23
 Moyle, J. B., *see* Nielsen, E. L.
 Muesebeck, C. F. W. **1** 155, **4** 22
 Muhle-Larsen, C., *see* Gram, K.
 Mühlenbruch, C. W. **5** 187
 Mühlstoph, W. **1** 46, **3** 319
 Muir, A. **3** 22
 — and Fraser, G. K. **3** 22
 Muirhead, D. M. **4** 116
 Mukherjee, A. **4** 232, **5** 85, **155**
 Mulders, van **1** 94
 Mulford, F. L. **2** 214
 Muller, C. H. **2** 125, **3** 37, **4** 17, **21**, **97**, **5** 106
 — *see* Tillson, A. H.
 Müller, E. **4** 217
 Müller, F. P. **1** 298, **2** 28
 Müller, H. **5** 285
 — and Scheu, G. **1** 154
 Müller, H. F., *see* Overbeck, W.
 Muller, J. L. **3** 317
 — and Slifko, C. **3** 280
 Müller, K., *see* Krauss, G.
 Müller, O., *see* Storch, K.
 Müller, O. A. **1** 174
 Muller, R. E., *see* Katzen, R.
 Müller-Kögler, E. **3** 168
 Mulloy, G. A. **1** 91, **2** 165, **3** 130, **4** 162, **167**, **5** 146, **255**, **289**
 Multamäki, S. E. **1** 185, **5** 249
 Münch, E. **1** 242
 Munger, T. T. **2** 162, **3** 42, **115**, **4** 90, **5** 26, **177**
 — and Briegleb, P. A. **4** 99
 — and Morris, W. G. **5** 67
 Munger, T. T., *see* Bransford, W.
 — *see* McComb, F.
 Munns, E. N. **2** 276
 — Preston, J. F., and Sims, I. H. **1** 292
 — *see* Murray, M. A.
 — *see* Sims, I. H.
 Munro, R. **2** 324
 Munthe, T. **4** 263
 Muntz, H. H. **5** 183, **189**
 Murayama, J. **2** 122
 Muromtseva, V., *see* Sharkov, V. I.
 Murphy, D. F. **5** 62
 Murphy, L. S. **2** 254, **4** 199
 Murray, M. A., and Munns, E. N. **5** 192
 Murrill, W. A. **1** 140, **4** 21, **221**
 — and Palmer, E. J. **4** 21
 Murthy, S. N. **5** 237
 Murty, N. N. **1** 102
 Musgrave, A. J., *see* Potter, C.
 Musick, A. H. **5** 130
 Mussman, A. H., *see* Hammar, C. H.
 Myer, D. S., *see* McCall, M. A.
 Myer, J. E. **2** 241, **4** 53
 NABLO, S. U. **3** 259
 Nafziger, J. **3** 195
 Nagasawa, T. **2** 142
 Nagata, M., *see* Kawashima, R.
 Nägeli, J. P., and Steffen, E. H. **4** 138
 Nägeli, W. **3** 101, **4** 29
 Nagle, J. P., and Steffen, E. H. **4** 138
 Nagle, W. **1** 283
 Najera y Angulo, F. **5** 270
 Nakai, T. **2** 198
 Nakamura, H., and Takauti, E. **3** 230
 Nakamura, K., *see* Shikata, M.
 Nakatuka, T., *see* Miura, I.
 Nakayama, J. **3** 171
 Nakazima, Y., and Suzuki, S. **2** 231
 Nance, M. N. **2** 244
 Nano, J. F. **1** 304
 Nannfeldt, J. A. **4** 95
 Napier-Bax, S., and Wheeler, G. T. **1** 33
 Narayanamurti, D. **3** 321, **4** 108, **176**, **5** 114, **124**, **186**, **195**
 — and Gopalachari, R. **5** 184
 —, Pande, J. N., and Roy, D. C. **4** 121
 — and Purushotham, A. **5** 182
 — and Ranganathan, V. **4** 116, **170**, **5** 42, **119**, **186**
 —, Ranganathan, V., and Chaudhuri B. R. **4** 174
 —, Ranganathan, V., and Ikram, M. **5** 119
 —, Ranganathan, V., and Roy, D. C. **5** 186
 — and Singh, K. **4** 174, **5** 186, **187**
 Nardy, R. V., *see* Collins, D. L.
 Nash, R. W. **4** 254, **5** 274
 — *see* Peirson, H. B.
 Nash, T. A. M. **1** 152, **2** 10, **3** 358, **4** 197
 Näslund, M. **1** 195, **4** 62, **5** 66, **179**
 Nast, C. G. **5** 237

AUTHORS INDEX

- Nast, C. G., *see* Bailey, I. W.
 Nathanael, W. R. N., *see* Child, R.
 Natividade, J. V. 1 270
 Natlacen, F., *see* Gläser, H.
 Naudé, T. J. 3 343
 —, Ripley, L. B., and Petty, B. K. 2 328
 Navalkar, B. S. 2 115
 — *see* Bharucha, F. R.
 Navarro de Andrade, E. 3 128, 4 27
 Naylor, E. E. 5 53
 Neal, O. M. 3 203
 Nebesar, R. J. 5 119, 264
 Nebu, T., *see* Ueda, Y.
 Needler, A. B., *see* Needler, A. W. H.
 Needler, A. W. H., and Needler, A. B. 4 159
 Neethling, E. J. 5 157
 Neetles, W. C. 5 48
 Neetzel, J. R., *see* Eyre, F. H.
 — *see* LeBarron, R. K.
 Neff, P. 1 197, 4 62
 Negi, S. S. 2 255
 Neilson-Jones, W. 3 335, 5 233
 Nellis, J. 1 199
 Nelson, A. Z. 3 278, 4 140
 Nelson, C., *see* Ezekiel, W. N.
 Nelson, M. L. 1 161, 2 132, 3 290
 Nelson, R. M. 2 193
 Nelson Smith, J. H. 3 65, 4 25
 Némec, A. 1 17, 77, 86, 90, 264, 2 137, 3 21, 71, 158, 286, 4 86, 186, 246, 5 12
 — and Borisov, S. 5 88
 — and Marán, B. 2 14
 Nemeth, F. F. 4 59
 Nemkin, A. S., *see* L'Amkin, V. A.
 Nenzell, G. 5 199
 — *see* Mattsson-Märn, L.
 Nesbitt, W. A. 5 17
 Nesterchuk, G. I. 1 151
 Nettles, W. C. 2 153, 4 179, 5 202
 Neu, W. 4 255
 Neubauer, L. G., and Rands, M. B. 3 235
 Neubrech, W. le R. 1 184, 2 64, 5 35
 Neuhoff, W., *see* Knauth, B.
 Neumann, O. 1 143
 Neunhoeffer, H. 2 139, 3 259
 Nevard, E. H., *see* Chaplin, C. J.
 — *see* Rendle, B. J.
 Nevin, J. V. 3 59, 228
 Nevros, K., and Zvorykin, I. 1 128, 226
 Newcomb, E. H. 5 91
 Newins, H. S. 2 310, 4 241, 5 229
 Newlin, J. A. 2 147, 302
 — and Trayer, G. W. 4 34
 Newman, F. S. 1 233
 — *see* Haddow, W. R.
 Newman, S. A. 2 251
 Newton, J. D., *see* Wyatt, F. A.
 Newton, L. A. 4 199
 Nichol, C. W. 4 117
 Nicholls, R. V. V. 5 43
 Nichols, C., *see* Smith, E. C.
 Nichols, L. M., and Chambers, T. B. 1 292
 Nichols, W. 5 187
 Nick, H., *see* Clotofsky, E.
 Nickerson, D. E. 1 299
 Nickerson, R. F. 4 35
 Nicol, A. K. F. 3 121
 Nicolas, S. 2 9, 111
 Niederhof, C. H., and Dunford, E. G. 4 215
 — and Stahelin, R. 4 14
 — and Wilm, H. G. 4 88, 5 32
 — *see* Johnson, W. M.
 Nielsen, E. L., and Moyle, J. B. 4 19
 Niethammer, A. 4 237
 Nikitin, I. N. 1 259
 Nikitin, N. I., *see* Orlova, I. M.
 Niklas, O. F. 4 194
 — *see* Bitter, B.
 Nikolaev, N. F., Sinelobov, E. A., and Khaykin, S. Kh. 2 319
 Nikolaeva, T. L. 3 115
 Nilsen, J., and Sleppen, J. 4 134
 Nilsson-Ehle, H. 2 116, 117
 Nimmo, M., *see* Sanzen-Baker, R. G.
 Nims, L. F., *see* Goodwin, C. W.
 Nisida, K. 3 236
 —, Miyama, R., and Soezima, J. 2 149
 Nix, L. A. 2 253
 Nixon, G. E. J. 5 246
 Noakes, D. S. P. 3 267
 Noble, B., *see* Borglin, J. N.
 Noble, N. S. 1 250, 3 254, 4 60
 Nobles, M. K. 5 242
 — *see* Mounce, I.
 Noiset, M. 2 33
 Nolla, J. A. B. 5 13
 Nolte, H.-W. 3 84, 171, 348, 4 22, 130
 Nordfors, G. 3 207
 Nordmann, C. F. 3 126
 Norkrans, B., *see* Melin, E.
 Norlin, E. 4 242
 Normand, D. 1 172
 Norris, C. B. 5 42
 Norton, N. A. 5 115
 — *see* Kynoch, W.
 Nosti, J. 3 279
 Novak, A., *see* Krestinski, V. N.
 Nowak, A. 3 134, 4 238
 Nunberg, M. 1 238
 Nusser, E. 5 114
 Nutman, F. K., *see* Schmid, F. A. F.
 Nyblom, E. 2 255
 Nyström, B. 2 278, 5 210
 OBERG, T. P., Schwartz, R. T., and Shinn, D. A. 5 187
 Oberli, H. 5 249
 O'Brien, T. E. H. 4 183
 Ochoterena 5 158
 Ochsner, H. E., *see* Gevorkiantz, S. R.
 Oda, N. 3 147
 O'Donnell, C. A. 3 294
 — and Rodriguez, J. M. 5 270
 O'Donnell, J. 1 187
 Odum, E. P. 5 100
 O'Dwyer, M. H. 1 175, 2 51
 Oeffinger, E. F., and Stauffer, H. G. 5 48
 Oelkers, C. 2 297
 Oeltmeier, W. M. 4 64
 Offord, H. R. 4 56
 Offord, H. R., Atta, G. R. van, and Swanson, H. E. 2 158
 Ogawa, K. 3 228
 Ogura, Y. 4 17
 Ohno, H., *see* Hemmi, T.
 Ohske, P., *see* Hennig, K.
 Okay, M. I. 5 132
 Okey, C. W. 2 15
 Olberg, A. 1 85, 3 118
 Olds, H. F., *see* Mathers, W. G.
 Olerinski, V. Ya. 3 214
 Oliphant, J. N. 3 176, 4 66, 201, 5 123, 292
 Oliveira, A. P. de 5 67
 Oliveira, M. de L. d' 1 242
 Oliver, R. W. 1 261
 — and Grace, N. H. 2 212
 Oliver, W. A. 3 318
 Olsen, C. 5 90
 Olsen, C. F. 3 338
 Olsen, O. A. 5 292
 Olson, A. J. 3 340
 Olson, A. R., and Hicock, H. W. 4 118
 — *see* Hicock, H. W.
 Olson, C. E. 2 291
 Olson, D. S. 1 162
 Olson, G. T. 2 166
 Olson, R. M., *see* Rowley, F. B.
 Olsson, E. 3 17
 Olsson, R. G. 4 217
 Oosting, H. J., and Billings, W. D. 4 219
 — and Humphreys, M. E. 2 210
 — and Reed, J. F. 5 27
 — *see* Beaven, G. F.
 Opie, R. S., *see* Ehrlich, J.
 Opitz, H., and Reese, H. 2 56
 Opsahl, W. 1 198, 255, 2 36, 5 69
 Oramas, J. M. 4 166
 Orchard, C. D. 5 69
 Ording, A. 1 136, 3 350, 4 259, 5 8, 16, 144, 287
 Orellana, R. 4 169
 Organ, G. J., *see* Melville, R.
 Orlova, I. M., and Nikitin, N. I. 4 15
 Orman, H. R., *see* Reid, J. S.
 Örnhielm, R. 3 144, 5 123
 O'Rourke, F. L., *see* Stoutmeyer, V. T.
 Orr, L. W., *see* Davis, W. C.
 — *see* Graham, S. A.
 Orr, S. W. 3 159
 Orr, T. J. 4 131
 Orsdel, J. P. van 4 111
 Orsenigo, G. 3 78
 Osborn, A. 3 109, 5 104
 Osborn, B. 5 146, 244
 Osborne, J. G. 1 92, 5 205
 Osborne, W. B. 2 324
 O'Shane, R. 2 319
 Osima, U., and Isii, M. 2 236
 —, Isii, M., and Hyo, Z. 4 49
 —, Siraki, Z., and Hyo, Z. 3 66
 Ossowski, L. 3 159, 165, 348, 4 60, 164
 Osterwalder, A. 4 249
 Ostrander, G. N. 4 139
 Ostrom, C. E. 3 349, 4 227, 250, 257
 — and Ferree, M. J. 4 227

AUTHORS INDEX

Ostrom, C. E., *see* Lyman, R. R.
 Ostwald, H. 4 65, 260
 Othmer, D. F., Gamer, C. H., and
 Jacobs, J. J. 4 119
 —, Jacobs, J. J., and Pabst, A. C.
 4 119
 — and Royer, R. H. 4 119
 — *see* Aries, R. S.
 — *see* Katzen, R.
 Otto, J. H., *see* Potzger, J. E.
 Oudemans, T. C. 2 23, 73
 Oudin, A. 1 50, 132
 Overbeck, W. 4 242
 — and Müller, H. F. 5 45
 Overholts, L. O. 2 26, 4 220, 5 243
 Ovsyannikov, V. F. 4 158
 Owens, R. E., *see* Cox, L. D.

PABLO 2 60, 3 58
 Pabst, A. C., *see* Othmer, D. F.
 Pacheco de Tôrres, J. 3 308, 5 113
 Packard, F. M. 4 250
 Pacumbaba, P. O. 2 239
 Paddick, M. E.
 Paddock, W. R.
 Padwick, G. W.
 Pady, S. M. 3 74, 4 126
 Page, R. H., and Bryan, J. E. 2 198
 Painter, J. H., *see* Potter, G. F.
 Paladino, F. J. 4 27
 Palazzo, F. C. 3 142
 Palkin, S., *see* Chadwick, T. C.
 Pallay, N. 2 50, 5 36
 Pallman, H., and Siegrist, H. 3 142
 Palmer, E. J. 4 223
 — *see* Murrill, W. A.
 Palmer, J. W. 3 146
 Palmer, R. C. 5 271
 Palmiter, D. H., *see* Hamilton, J. M.
 Palosuo, V. 2 294
 Pande, J. N., *see* Narayanamurti, D.
 Panfilov, Y. 4 29
 Panshin, A. J. 3 311, 4 170
 — *see* Brown, H. P.
 — *see* Stevens, T. D.
 Pantulu, J. V. 5 96
 Paquet, G. 5 108
 Paquette, R. G., *see* Brown, W. E.
 Parde, K. 3 140
 Parente, E. 1 260
 Parfent'ev, V. Ya. 1 153
 Parham, W. L. 4 99
 Park, E. R., *see* Girton, R. E.
 Park, K. W. 4 112
 Parker, H. A. 4 163, 197
 Parker, K. G., Readio, P. A., Tyler,
 L. J., and Collins, D. L. 3 164
 — *see* Collins, D. L.
 — *see* Rankin, W. H.
 — *see* Tyler, L. J.
 Parker, K. W. 2 215
 Parker, L. A. 4 59
 Parker, R. L. 3 346
 Parker, R. N. 2 26, 295, 3 127
 Parkin, E. A. 1 43, 3 38, 54, 4 188,
 5 260
 — and Phillips, E. W. J. 1 280
 Parkin, G. 4 188
 Parkin, J. 5 109

Parkinson, L. 2 58
 Parks, R. Q., Hood, S. L., Hurwitz,
 C., and Ellis, G. H. 5 163
 Parmelee, F. T. 4 131
 Parodi, L. R. 2 185, 200
 Parr, F. L. 3 215
 Parr, T. 2 287, 5 142
 — *see* Goodwin, C. W.
 Parr, T. J. 2 123
 Parras, V. 1 88
 Parrett, A. N., and Woodruff, E. H.
 3 142
 Parsons, G. B. 5 187
 Parsons, H. H. 4 173
 Paschen, K. 4 100
 Pašcovski, S. 1 255, 3 157
 Patel, C. B. 5 194
 Paterson, A. 1 167
 —, Lubicz, N., and Manifold
 Developments, Ltd. 5 263
 Paterson, D. D. 1 203
 Pato, M. 3 127
 Paton, R. R. 4 24
 — *see* Wilson, J. D.
 Patrick, J. G. 3 59
 Patrone, G. 2 79
 Patten, R. F. 4 127
 Patterson, G. K. 4 160
 Patterson, P. M. 3 34
 Patullo, M. L. 2 199, 3 299, 4 199
 Patzer, W. E., *see* Wilde, S. A.
 Paul, B. H. 1 173, 3 224, 305, 4 33,
 5 114
 — *see* Bray, M. W.
 Pauley, S. 4 17
 Pavari, A. 1 138, 3 279, 4 82
 Pawlowicz, J., *see* Gieysztor, M.
 Payne, H., and Unwin, P. T. 2 139
 Payne, M. A. 3 178
 Peace, T. R. 1 137, 143, 261, 2 118
 — *see* Jones, F. H.
 Pearce, J., and Reineke, L. H. 2 247
 — and Spaulding, P. 4 249
 Pearce, J. K. 2 320, 3 15
 Pearce, A. S. 5 160
 Pearce, D. W. 2 68
 Pearce, H. L. 1 135
 Pearson, G. A. 1 140, 252, 2 82, 138,
 292, 4 99, 136, 163, 212, 228,
 5 246, 248
 — and Wadsworth, F. H. 2 112,
 3 177, 5 175
 Pecciarini, A. M., *see* Messeri, A.
 Pechanec, J. F. 3 34
 Pechnikova, S. S. 2 236
 Pechuman, L. L. 3 347, 5 202
 Peck, E. C. 2 310, 3 234, 4 180, 5 264
 Peck, M. E. 4 94
 Peck, O., *see* Atwood, C. E.
 Peck, R. H., *see* Sechrist, W. C.
 Peirson, H. B. 3 252, 4 252
 — and Nash, R. W. 3 83
 Pelanda Ponce, L. 5 164
 Pelisek, J. 1 16
 Pellegrin, F. 2 27
 Pelly, R. S. 5 146
 Pemberton, C. E. 5 266
 Pendleton, R. L. 2 283, 4 85
 Penef, N. 4 26, 102
 Penfold, A. R., and Morrison, F. R.
 2 237, 3 155

Penfold, A. R., Morrison, F. R., and
 Smith-White, S. 4 244
 Penfold, W. T., and Hall, T. F.
 1 148, 246, 5 102
 — and Howard, J. A. 3 33
 Penistan, M. J. 4 93
 Peniston, Q. P., McCarthy, J. L.,
 and Hibbert, H. 1 175, 2 303
 Penman, F., Taylor, J. K., Hooper,
 P. D., and Marshall, T. J. 1 77
 Penny, J. S. 3 97
 Pepe, G. 1 265
 Pepler, W. A. E. 2 30
 Pera, J. D., *see* Buckman, S. J.
 Percival, W. C. 4 262
 Perelygin, L. M. 4 171
 Pérez, H. M. 3 106
 Pérez-Moreau, R. A., *see* Castel-
 lanos, A.
 Perham, A. N. 1 33
 Perkins, H. C. 5 48
 Perkins, N. L. 3 244
 Perret, G. 2 58
 Perrin, H. 1 193
 Perry, B. A. 5 165
 Perry, D. H. 1 132, 3 27
 Perry, G. S. 5 104
 Perry, L. M., *see* Merrill, E. D.
 Perry, R. S. 1 172, 3 307
 Perry, T. D., 3 228, 4 113, 5 42, 43,
 263
 — *see* Bernhard, R. K.
 Person, H. L. 2 159, 4 258
 — and Hallin, W. 4 162
 Persson, E. 2 156
 Perušić, A. 3 264
 Pescott, E. E. 3 199, 5 29
 Pessin, L. J. 1 82, 91, 156, 4 104, 105
 — and Burleigh, T. D. 3 31
 — and Shephard, A. L. 3 131
 Petcut, M. 1 81
 — and Radulescu, A. V. 3 202
 Pételot, A., *see* Crevost, C.
 Petering, W. H., *see* Stamm, A. J.
 Peterson, F. C., *see* Freeman, R. D.
 Peterson, G. 1 299
 — *see* Lexen, B. R.
 Peterson, L. E. 3 91
 Peterson, W. J., *see* Smits, B. L.
 Petheram, H. D. 2 210
 — and Porterfield, H. G. 3 44
 Petračić, A. 3 21, 32
 Petrie, A. M., *see* Smith, J.
 Petrides, G. A. 4 21
 Petrini, S. 1 301, 303, 3 110, 5 165,
 204, 207, 209, 213
 Petrov, M. F. 3 67, 4 183, 5 131
 Petrus 1 91
 Pettet, A. E. J., and Lane, F. G. 2 211
 Pettifor, C. B. 1 172, 4 180
 — *see* Ernest, E. C. M.
 — *see* Findlay, W. P. K.
 Petty, B. K., *see* Naudé, T. J.
 — *see* Ripley, L. B.
 Pew, J. C., and Knechtges, R. G. 1
 273
 — and Schafer, E. R. 2 45, 5 44, 118,
 123
 Pfeffer, A. 5 245
 Pfenninger, L., and Frey-Wyssling,
 A. 2 123

AUTHORS INDEX

- Pfort, E. 4 81
Phelan, V. B., *see* Hoback, W. G.
Phelps, V. H. 2 34
Philippis, A. de 1 228, 2 48
Phillips, A. D. 4 50
Phillips, A. E. 4 42
Phillips, E. P. 3 75
Phillips, E. W. J. 1 43, 2 305, 3 219, 221
— *see* Parkin, E. A.
Phillips, G. R., Gibbs, F. J., and Mattoon, W. R. 3 204
— *see* Fitzwater, J. A.
Phillips, J. E. 3 40
Piazolo, G., *see* Freudenberg, K.
— *see* Lautsch, W.
Piche, G. C. 3 317
Pickett, B. S., *see* Maxon, M. A.
Pickford, G. D., *see* Reid, E. H.
Pidduck, H. B. 1 227
Pidgeon, I. M. 3 34, 4 19
Pierce, J. H. 4 21, 96, 158, 222, 223, 5 22
Pierce, R. G. 4 190
Pierce, W. M. 3 357
Pierre, W. M., *see* Broadfoot, W. M.
Pierson, A. H., *see* Reynolds, R. V.
Piest, H. 3 147
Pilát, A. 3 205
Pillow, M. Y. 2 218, 3 139
—, Chidester, G. H., and Bray, M. W. 3 319
Pillsbury, R. W., and Hutchinson, A. H. 4 156
Pinkus, R. 5 66
Pinney, J. J. 5 30
Pirie, F. W. 5 157
Pirone, P. P. 2 19, 3 71, 163, 215, 258, 334, 4 247, 5 280, 281
— and Bender, T. R. 3 342
Pisek, A., and Cartellieri, E. 2 31
Pitcairn, G. D. 4 64
Pitkin, F. A. 3 266
Pittier, H. 3 32
Pitt-Schenkel, C. W. J. 1 24
Plakidas, A. G. 4 127
Plambeck, H. 1 179
Plank, D. K. 1 162
Plante, E. C. 3 328
— *see* Almond, J. N.
Plantefol, L., and Gautheret, R. 5 164
Platen, von 3 256
Platzer, H. B. 2 147
Plavšić, S. 4 96
Plice, M. J. 2 281
Plitt, T. M. 1 172
Ploetz, T. 2 221, 4 237
— *see* Freudenberg, K.
Plotho, O. von 3 194
Podhorsky, J. 1 85
Poeteren, N. van 2 160
Pohtjanheimo, O., *see* Meurman, O.
Pohl, F. 1 150, 3 208
Pohlman, G. G., *see* Marten, E. A.
Pointer, R. W. 4 111
Polchau, W. 1 27
Polhamus, L. G. 5 53
Pomerleau, R. 2 121, 3 74, 341, 4 125, 190, 247, 248, 5 59
— and Morais, L. 3 339
Ponce, G. 3 140
Ponce, L. P. 5 53
Pond, J. D. 1 177, 4 62
— *see* Davis, J. E.
Pöntynen, V. 2 277, 5 156, 293
Pool, R. J. 2 292
Pope, C. T. 2 38
Pope, S., *see* Tyler, L. J.
Popenoe, W. 3 35, 4 83, 5 70
Popescu, C. V. 3 181
Popov, V. V. 4 225
Popova, Z. T., *see* Kokina, S. I.
Porter, E. 1 108
Porterfield, H. G., *see* Petherham, H. D.
Portnykh, Yu. P. 4 194
Posey, G. B., *see* Hopp, H.
Poskin, A. 1 150, 2 34
Post, F. A., *see* Dreibelbis, F. R.
Potter, C., and Hocking, K. S. 2 247
— and Musgrave, A. J. 2 230
Potter, G. F., Angelo, E., Painter, J. H., and Brown, R. T. 2 237
— *see* Angelo, E.
— *see* Fernholz, D. L.
Potter, G. J. C. 2 308
Potts, S. F. 1 245, 297
—, Cline, A. C., and McIntyre, H. L. 4 129
— and Waterman, A. M. 1 295
— and Whitten, R. R. 3 164
— *see* Whitten, R. R.
Potzger, J. E. 1 75, 228, 4 18, 5 8, 18, 86
— and Friesner, R. C. 1 129, 5 103
— and Otto, J. H. 5 85
— and Wilson, I. T. 4 11, 5 156
Powers, J. L., and Cataline, E. L. 2 143
Powles, R. 2 211
Poyarkova, A. I. 2 201
Pozdena, L., *see* Ruschmann, G.
Prasad, J. 3 44, 116, 4 159, 5 13, 162, 177, 197
Prasad, S., *see* Bal, S. N.
Prat, S. 1 41
Pratt, G. H., *see* Barkas, W. W.
Pratt, M. B. 3 264
Pratt, R. W. 1 102, 298, 3 242, 4 111
Pravdin, L. F., and Yakimov, P. A. 2 236
Prebble, J. S., *see* Balch, R. E.
Prebble, M. L. 4 22
Prestcott, H. F. 1 304
Preston, C. F. 3 61
Preston, J. F. 1 91, 200, 3 353, 4 137, 5 111, 146
— *see* Munns, E. N.
Preston, R. D. 1 144, 169, 2 123, 4 107, 5 35, 36
— and Allsopp, A. 2 141
Preston, R. J. 2 198, 4 217, 5 97
Priaulx, A. W. 5 137
Price, M. W., *see* Whipple, S. C.
Price, W. H. 3 88
— and Grogan, M. W., 3 242
Prichard, R. P. 3 279
Pridham, A. M. S. 2 282, 4 87, 103
Priehäusser, G. 1 126
Priestler, J. H. 5 238
— and Scott, L. I. 1 144
Prince, J. B. 2 67
— and Fellows, E. S. 2 67
— *see* Hale, J. D.
Pring, N. G., and Bakhsh, A. 2 70
Probyn, E. H. 2 251
Proctor, P. 3 312
Proissl, A. 3 285
Pronchenko, V. F. 5 88
Propach, H., *see* Wettstein, W. von.
Proudfoot, M. J. 5 206
Proulx, J. 5 266
Prütz, G. 1 171
— *see* Miedler, K. A.
Prütz, J., and Glück, A. 4 232
Pryor, A. R. 1 173
Pryor, L. D. 1 187, 2 196, 4 157
— and Wickett, H. C. 3 337
— *see* Cromer, D. A. N.
Pulle, A. 4 94
Puncochar, J. F., *see* Quinones, L. R.
Punshon, T., *see* Borglin, J. N.
Puntambekar, S. V. 1 50, 4 183
— and Batra, P. C. 5 195
— and Krishna, S. 5 188
Puri, V. 4 15
Purushotham, A., *see* Narayanamurti, D.
Pusateri, S. J. 4 20
Puster, R. 1 190, 3 130
Putilov, A. N. 2 208
Putnam, J. A., and Bull, H. 2 299, 3 126, 127, 130
— *see* Winters, R. K.
Putod, R. 1 39
Pyatnitski, S. S. 1 138, 3 208, 4 17, 226
Pyhäälä, E. 2 238
Pyke, E. E. 3 111
Pyle, J. J., *see* Brickman, L.
QUARRÉ, P. 5 275
Quevedo, M. A. de 1 126
Quinones, L. R., and Puncochar, J. F. 5 269
Quirke, D. A. 5 174
RAACK, K., *see* Huber, B.
Rabanus, A. 1 98, 3 143
Raber, O. 3 189
Rabotnov, T. 2 197
Rabouille, G. 2 70
Radišić, J. 3 237
Radulescu, A. V. 1 52
— *see* Petcut, M.
Rafalski, J. 1 273
— and Stryla, S. 1 274
— and Wardyn, A. 1 275
Rahman, K. A., and Abdul Wahid Khan 4 254
Raizada, M. B. 1 248, 3 114, 203, 4 96, 158, 5 20, 105
Raizenne, H. 3 238
Ram, B. S. 4 136, 5 143
— *see* Laurie, M. V.
Ramaswami, S. 4 119, 181
— and Dey, A. C. 5 50
—, Dey, A. C., and Varma, B. S. 5 128
Ramirez, I. 1 177

AUTHORS INDEX

Ramsey, G. R. 2 241
 Ramsey, H. 3 295
 Ramstetter, H. 3 143
 Randall, R. 4 261
 Randell, P. C. 3 106
 Rands, M. B., *see* Neubauer, L. G.
 Ranganathan, C. R. 1 24
 Ranganathan, V., *see* Narayanamurti, D.
 Rangaswami, Rao Sahib S. 5 52, 132
 — and Griffith, A. L. 1 140, 142, 2 287, 3 342
 Rangel, J. L. 5 271
 Rankin, M. A. 1 18, 2 71
 Rankin, W. H., Parker, K. G., and Collins, D. L. 3 79
 Rao, L. N. 4 92, 93, 5 22
 Rappaport, J. 2 134, 4 154
 — *see* Hubert, B.
 Rapraeger, E. F. 1 95, 3 58, 154, 258, 4 48, 99
 Rasmussen, B. L., *see* Anderson, R. E.
 Rasmussen, C. A., *see* Hermann, A.
 — *see* Hubert, E. E.
 Rasmussen, D. I. 3 204
 Ratcliffe, F. N., and Cummins, J. E. 1 251
 Ratcliffe, G. T., *see* Webster, C. B.
 Ratliff, F. T., *see* Kress, O.
 Raturi, P. D. 5 74
 Raup, H. M. 2 25, 3 121
 — and Carlson, R. E. 3 176
 Rausch, H. 4 65
 Rautvauri, E. 5 292
 — *see* Linnamies, O.
 Ravitzky, B. 2 212
 Ravitscher, F. 4 88
 Ray, R. G. 2 276, 3 178
 Ray, W. W. 2 192, 284, 3 162
 — *see* Jenkins, A. E.
 Rayl, E. M., *see* Ineson, F. A.
 Rayner, M. C. 1 16, 129, 3 21
 — and Levisohn, I. 4 14
 Rayner, R. W. 3 115
 Raynor, E. W. 2 36, 206
 Rayos, J. A. 3 126
 Rayss, T., and Habelska, H. 5 199
 Razous, P. 4 44, 5 126, 127, 269
 Read, A. D. 2 211
 Read, H. A. 4 153
 Read, P. R., *see* Zimmerman, F. L.
 Read, W. S. 5 54
 Readey, J. C., *see* Grant, T. J.
 Radio, P. A., *see* Parker, K. G.
 Rechinger, K. H. 1 83
 Recke, Graf v. d. 2 139, 3 315
 Recknagel, A. B. 1 150, 193, 3 357, 4 28, 5 62
 — and Westveld, M. 4 225
 — *see* Abel, G. W.
 — *see* Crawshaw, T. H.
 Record, S. J. 1 169, 271, 2 201, 3 134, 309, 4 67, 107, 159, 170, 230, 231, 5 34, 113, 181
 — and Hess, R. W. 2 45, 218, 3 51, 134, 219, 4 32, 5 34
 Redd, J. C., *see* Anderson, E.
 Reddish, G. F. 4 183
 Reddy, T. V., *see* Iyyar, S. N. C.
 Redgrove, H. S. 5 130

Redman, K. 4 222, 5 22
 Reed, B., 4 47
 Reed, E. L., *see* Glock, W. S.
 Reed, H. R., *see* Wahlenberg, W. G.
 Reed, J. F. 1 252
 — *see* Oosting, H. J.
 Reed, M. J., *see* Barkley, F. A.
 Reeks, W. A. 2 202, 4 250
 — *see* Balch, R. E.
 Rees, D. M., and Gaufin, A. R. 3 256
 Rees, L. W., and Kaufert, F. H. 4 12
 — and Buckman, S. J. 2 220
 — *see* Erickson, H. D.
 Reese, H., *see* Opitz, H.
 Regel, C. v. 5 54
 Régnier, R. 4 160
 Reháč, J. 5 238
 Rehder, A. 1 149, 3 205, 4 20
 Rehman, M. A. 4 117, 118, 241, 5 114, 126, 190
 — and Ishaq, S. M. 5 35
 — and Kapur, I. K. 4 43
 — and Mohammad, S. 4 117
 — *see* Kapur, S. N.
 Reichelt, H., *see* Bavendamm, W.
 Reid, D. 5 46
 Reid, D. G., *see* Harrar, E. S.
 Reid, E. H., and Pickford, G. D. 3 352
 Reid, J. J. 4 176
 Reid, J. S., and Orman, H. R. 3 294
 Reid, J. W., *see* Wilson, W. T.
 Reihling, K. 1 230, 3 104
 Reinecke, O. S. H., and Wicht, C. L. 5 22
 Reineke, L. H. 2 250, 330, 3 85, 4 102, 166, 219, 226
 — and Bratton, A. W. 2 234
 — *see* Behre, C. E.
 — *see* Belotelkin, K. T.
 — *see* Pearce, J.
 Reinhold, F. 5 231
 Reinhold, F. A. 1 148
 Reinhold, G. 4 99
 Reinmuth, E. 4 255
 Reitzer, M., and Stux, S. 4 45
 Remezov, N. P. 2 281
 Rendle, B. J. 5 180
 —, Armstrong, F. H., and Nevard, E. H. 4 54
 — and Franklin, G. L. 5 42
 Renfrew, A. 3 320
 Rennerfelt, E. 1 276, 4 114, 234, 237, 5 184, 188
 Renshaw, J. F., *see* Barrett, L. I.
 Reschke, J., *see* Scheunert, A.
 Rest, E. D. van 2 180
 — *see* Barr, G.
 Rest, J. C. van 1 203
 Reuther, W., *see* Dickey, R. D.
 — *see* Sell, H. M.
 Reveal, J. L., *see* Bradshaw, K. E.
 Rex, E. G. 3 250, 5 281
 Rey, E., *see* Ruzicka, L.
 Reyes, L. J. 2 259
 — and Aguilar, L. 1 43
 Reynolds, A. O., *see* Katzen, R.
 Reynolds, E. S. 2 283
 Reynolds, H. A. 1 199, 3 91, 243, 357
 Reynolds, R. R. 1 92, 107, 166, 2 55, 306, 3 354

Reynolds, R. R., *see* Bull, H.
 Reynolds, R. V., and Pierson, A. H. 1 123, 2 8, 3 18, 99, 4 213
 Rhoad, A. O. 5 73
 Rhoads, A. S. 4 128
 — *see* Fawcett, H. S.
 Rhodes, A. D., *see* Doran, W. L.
 — *see* Hicock, H. W.
 Rhodes, R. R., *see* Bond, W. E.
 Ribers, U. 2 316, 5 185
 Rice, G. A. 1 186
 Rice, R. R., *see* Mitchell, J. W.
 Rice, T. A. 2 157
 Richards, A. P. 4 179
 Richards, C. A., and Chidester, M. S. 2 222
 Richards, E. S. 2 83
 Richards, L. W. 2 323
 Richards, P. W. 1 82, 3 105
 —, Tansley, A. G., and Watt, A. S. 1 148
 Richardson, A. E. V. 5 53
 Richardson, A. H. 2 211, 214
 Richardson, C. H. 3 257
 Richardson, N. A., and Lerner, E. E. 1 98
 Richey, H. W., *see* Maxon, M. A.
 Richter, A. A., *see* Krasnosselskaya, T. A.
 Richter, G. A. 3 320, 4 40
 Rickett, H. W. 5 248
 Ridley, H. N. 1 246
 Rieben, E. 1 266, 2 20
 Riechers, K. 1 97
 — and Igney, M. 4 180
 Rierink, A. 1 42
 Ries, H., *see* Gustafson, A. F.
 Rieth, K. 3 310
 Rietz, R. C. 1 89, 256, 2 301, 3 125, 233
 — and Kimball, K. E. 2 132
 Righter, F. I. 1 137, 245
 Rigotard, M. 1 27
 Riha, V. 5 289
 Riker, A. J., Gruenhagen, R. H., and Roth, L. F. 5 61
 — and Kouba, T. F. 2 72, 3 248
 —, Kouba, T. F., Brenner, W. H., and Byram, L. 5 60, 277
 — *see* Roth, L. F.
 Riley, C. G. 2 145, 222
 — and Skolko, A. J. 4 131
 Rimski-Korsakov, M. N., *see* Gusev, V. I.
 Riou, P., and Delorme, G. 1 234, 2 116, 3 154
 Rioux, L. J., and Barsalou, M. J. 4 40, 5 41
 Ripley, L. B., and Petty, B. K. 3 169
 —, Petty, B. K., and Heerden, P. W. van 2 329
 — *see* Naudé, T. J.
 Ripley, P. O., Armstrong, J. M., and Kalbfleisch, W. 5 118
 Risberg, G. E. 5 275
 Rishell, C. A. 5 121, 188
 Risi, J. 5 49
 Ritchie, J. E. 5 267
 Ritter, E. 2 155
 Ritter, G. A., *see* Carpenter, C.
 Ritter, G. J. 5 257

AUTHORS INDEX

- Ritter, G. J., *see* Gross, S. T.
— *see* Mitchell, R. L.
Ritter, L. 5 189
Ritzler, K., *see* Grossmann, H.
Rivard, P. 3 263
Robak, H. 5 11, 38
Robbins, P. W. 4 227
Robbins, W. J., and Ma, R. 4 188, 5 103
Robert, F. B. 4 120
Roberts, E. G. 1 131
Roberts, E. H. 3 88
Roberts, E. V., and Cruikshank, J. W. 3 113, 4 30
Roberts, O., and Styles, S. A. 1 135
Roberts, R. P. 2 64, 154
Robertson, A., *see* McGookin, A.
Robertson, E. D. 2 315
Robertson, F. 4 198
Robertson, F. C. F. 1 101
Robertson, W. M. 3 350, 4 24, 136, 196, 228, 5 207
Robinson, A. G. 3 106
Robinson, A. J. 2 80
Robinson, C. S. 1 196
Robinson, F. B. 4 18
Robinson, Sir R. 5 30
Robinson, T. R. 5 42
Robinson, W., *see* Epling, C.
Robinson, W. O., and Edginton, G. 4 88
Robitaille, J. M. 4 173
Robotnov, T. A. 3 292
Robyns, W., and Lamb, S. H. 1 149
Rochester, D. M. 3 245
Rochester, G. H. 1 95
Rode, A. A. 4 86
Rodger, Sir A. 3, 91, 4 66, 198
Rodgers, J. 4 12
Rodriguez, J. M., *see* O'Donnell, C. A.
Rodriguez, R., *see* Gemignani, E. V.
Roe, E. I. 3 126, 4 26
Roels, A. 1 39
Roeser, J. 2 32, 3 107, 4 101
Roessle, A. 3 147
Roessnel, B. 1 81
Roewekamp, F. W., *see* Miller, P. A.
Roger, J. G. 4 23
Rogers, D. H. 4 187
Rogers, E. G., and McIlvain, Z. E. 2 180
Rogers, J. S., and Beebe, C. W. 4 121
Rogers, N. S. 4 140
Rohmeder, E. 1 36, 46, 89, 103, 161, 2 210, 3 107, 125, 4 157, 164, 5 252
— and Chen, C. Y. 1 89
— and Loebel, M. 2 37
Rokusho, B., *see* Kamazuka, A.
Roldan, E. F. 1 263, 3 89, 4 57
Roller, J. H. 4 124
Roll-Hansen, F. 5 60, 199
Romanet, A. de 4 49
Romell, L. G. 1 129, 2 114, 3 47, 4 54
Ronayroux, M., *see* Mousseron, M.
Ronge, E. W. 2 233
Roof, L. R., *see* Lynch, D. W.
Rooney, H. N. 2 321
Roper, G. 5 140
Rosayo, R. A. de 1 132
— *see* Abeyesundere, L. A. J.
Rosendahl, R. O., and Wilde, S. A. 4 214
— *see* Mitchell, H. L.
Rosevear, D. R. 2 208, 4 152
Ross, C. R. 2 276
Ross, N. M. 2 216
Rossbach, G. B. 5 92
Rosser, G. L. 2 56
Roten, F. 4 120
Roth, E. R. 3 76, 5 39
— and Hepting, G. H. 5 59
—, Hepting, G. H., and Luxford, R. F. 5 260
— and Sleeth, B. 1 243
— *see* Davidson, R. W.
Roth, G. 3 120, 128, 302
Roth, L. F., and Riker, A. J. 4 55, 5 276
— *see* Riker, A. J.
Rothery, J. E. 2 253, 3 263
Rothmaler, W., and Vasconcellos, J. de C. 3 37
Rouschal, E. 2 17
Rousseau, J. 3 116
Routin, J. B., and Dawson, R. F. 5 164
Roux, M. A. 2 312
Rovesti, G. 4 50
Rowaan, P. A., and Gonggrijp, J. W. 1 50
Rowe, P. B. 2 14
Rowe, W. H. 1 304, 2 211
Rowland, W. S. 5 256
Rowley, F. B., Jordan, R. C., Olson, R. M., and Huettl, R. F. 5 189
Rowntree, J. B. 2 295, 4 167
Roy, A. N., *see* Guha, P. C.
Roy, D. C., *see* Narayanamurti, D.
Roy, H. 2 34, 249, 4 12
Roy, I. B. 1 255
Roy, N. C. 1 105
Royer, R. H., *see* Othmer, D. F.
Roze, E. 1 21
Rozema, C. E. 5 43
Ruban, Y. 1 253
Rubner, K. 1 36, 228, 3 109, 204, 290, 5 239, 274
Rubřov, S. 2 12
Ruckes, H. 3 253
Rudbäck, E. 2 313
Ruden, T. 5 208
Rudge, E. A., *see* Bromley, R. F.
Rüdiger, W. 2 47
Rudolf, P. O. 1 162, 2 133, 4 25
Rudolph, P. O., *see* Gervorkiantz, S. R.
Ruedy, R. 2 233, 4 181
Ruggles, A. G., *see* Korstian, C. F.
Ruiz, Q., *see* Mabesa, C.
Ruiz-Zorrilla, A. C., 4 122
Rulison, D. E. 2 252, 4 235
Rumbold, C. T. 3 35, 247
Runkel, R. 1 175, 3 50, 59, 229, 318, 4 231, 5 188
Running, K. D. 2 57, 3 60
Runquist, E., *see* Lindquist, B.
Rupert, J. A., and Leach, J. G. 4 191, 5 61
Rüsch, F., and Sander, P. 3 141
Ruschmann, G., and Pozdena, L. 5 25
Russell, A. 5 269
— *et al.* 5 129, 192, 193
Russell, Sir E. J. 4 84
Russell, G. W. 3 101
Russell, L. 5 17
Russell, L. M. 5 108
Russell, W. C. 2 147
Rust, S. F. 1 283
Rutherford, R. M. 3 89
Ruthman, H. D. 2 55
Růžicka, J. 1 16, 34, 39
Růžicka, L., Janet, W., and Rey, E. 5 90, 234
Ryan, E. J., *see* Stott, C. B.
Rydbeck, A. 1 103
Ryle, G. B. 1 51
SAALAS, U. 1 153
Saari, E. 1 56, 5 273, 290
Saarnijoki, S. 5 164
Sabau, V. 4 82
Sabharwal, L. R. 4 147, 211
Sabroe, A. S. 1 192
Sacco, D. J., *see* Donchower, W.
Sachenbacher, T. 3 124
Sachsenberg, E., Wolf, W., and Gottschald, R. 3 328
Sachsse, H. F. 4 200
Sagoschen, J. A., *see* Stather, F.
Sagreiya, K. P. 1 303, 2 33, 255, 335, 3 303, 4 137, 162
Sah, D. L. 1 33
Sahi, S. P. 2 296, 5 24
Sahlberg, W. 2 50
Sahlman, E. J. 3 62
St. George, R. A. 4 116
— *see* Craighead, F. C.
St. John, H., and Fosberg, F. R. 2 198
Saito, K. 3 348
Sakarova-Timofeeva, N. 4 51
Sakharov, M. I. 3 21
Sala, G. 1 200
Saldarelli, R. 1 306
Salisbury, E. J. 5 14
— and Jane, F. W. 2 181
Sallenave, P., *see* Carton, P.
Salman, K. A., and Bongberg, J. W. 4 193
— *see* Keen, F. P.
— *see* Miller, J. M.
Salter, R. M. 2 115, 3 113
Salvador, J. 1 85
Salverda, Z. 1 300
Salvoza, F. M., and Lagrimas, M. 4 219
Sambur, G. N., Babich, P. D., and Khomenko, K. A. 5 89
Sammii, J. C. 3 171
Sampath, S., Singh, B. N., and Bansal, R. K. 2 288
Sampson, A. W. 2 300
— and Glock, W. S. 4 196
Samson, T. 4 114, 176
Sandberg, G. 4 263
Sander, P., *see* Rüsch, F.
Sandermann, W. 2 238, 4 50
Sanderson, I. T. 2 124
Sands, W. M. 4 188
Sandstrom, W. M., *see* Lund, A. P.
Sandwith, N. Y. 4 21, 5 106

Sandwich, N. Y., *et al.* **1** 246
 Sangster, R. G. **4** 109
 Santos, J. B. dos **5** 235
 Sanzen-Baker, R. G. **1** 223
 — and Nimmo, M. **4** 53
 Saran, B., *see* Singh, B. K.
 Saran, J. L. **5** 133
 Sarkar, M. M. **3** 212
 Sarkar, S. N., *see* Bose, S. R.
 Sarvas, R. **5** 289
 Sass, J. E., *see* McComb, A. L.
 Sato, Y. **2** 190
 Sauer, E. **1** 97, 178
 Saunders, A. R. **1** 223
 Sauter, E. **3** 326
 Savely, H. E. **1** 152
 Savi, L. **1** 167
 Savulescu, A. **3** 172
 Sawamoto, T. **3** 252, 253
 — *see* Kôno, H.
 Sawyer, L. E. **1** 109
 Scaëtta, H. **4** 261
 Scammoni, A. **1** 148
 — *see* Dengler, A.
 Scanlon, E. H. **5** 254
 Scarff, J. G. **2** 112
 Schädelin, F. **4** 235
 Schädelin, W. **3** 110
 Schaeffer, L. **1** 78, 196, 300
 Schaefferberg, B. **4** 255, **5** 201
 Schafer, E. R., and Pew, J. C. **2** 45,
 5 44, 118, 123
 Schaffer, R. J. **4** 237
 Schaffner, J. V. **2** 195, **5** 202
 Schall, W. M. **5** 257
 Schamberger, F. **5** 124
 Schantz-Hansen, T. **1** 268, **2** 138,
 205, **3** 301
 — and Brown, R. M. **1** 228
 — and Joranson, P. N. **1** 127
 Schaphorst, W. F. **5** 36
 Scharpe, C. F. S., *see* Ireland, H. A.
 Schavilje, J. P. **3** 215
 Schechter, M. S., and Haller, H. L.
 5 90
 Schedl, K. E. **1** 153
 Scheffer, T. C. **1** 173, **3** 148
 — and Chidester, M. S. **5** 116
 — and Hansbrough, J. R. **5** 261
 — and Lindgren, R. M., **1** 288, **2** 145
 —, Wilson, T. R. C., Luxford, R. F.,
 and Hartley, C. **3** 137
 — *see* Chapman, A. D.
 — *see* Maize, E. R.
 — *see* Spaulding, P.
 Scheffter, H. **1** 96
 Schenk, C. A. **1** 111
 Schenker, M. **4** 44, 47
 Scherbatoff, H., *see* Jacks, G. V.
 Schery, R. W. **4** 93, **5** 19
 — *see* Woodson, R. E.
 Scheu, G. **1** 154
 — *see* Müller, H.
 Scheuble, R. **1** 291, **5** 270, 271
 Scheuermann, H., and Klein, H.
 3 229
 Scheunert, A., and Reschke, J. **5** 51
 Schick, B. **5** 270
 Schiemer, E. L. **2** 290
 Schierbeck, O., and Clarke,
 W. B. M. **2** 215

Schiffino, J. **3** 32
 Schilling, E. A. **5** 140
 Schimitschek, E. **1** 104, **2** 22, **3** 345,
 4 129, 130
 Schindler, F., *see* Kürschner, K.
 Schläger, J., *see* Späth, E.
 Schläpfer, P., and Stadler, O. **4** 120,
 5 128
 Schlittler, E., *see* Hartmann, M.
 Schlomann, A. F. **3** 307, 357
 Schlotterer, R. D. **5** 53
 Schlüter, R. **4** 118
 — and Fessel, F. **1** 182
 Schlyter, R. **2** 61
 Schmid, F. A. F., and Nutman, F. J.
 3 46
 Schmidt, E. **5** 287
 — *see* Huber, B.
 — *see* Jentsch, F.
 Schmidt, H., *see* Staudinger, H.
 Schmidt, W. **2** 36, **3** 44, 70
 Schmidt-Nielsen, S., and Høye, J.
 4 109
 Schmied, H. **3** 48
 — and Braun, R. **4** 110
 Schmitz, H. **5** 7
 —, Buckman, S. J., and Schrenk,
 H. von **3** 324
 — *see* Anderson, B. E.
 — *see* Christensen, C. M.
 — *see* Erickson, H. D.
 — *see* Hansen, H. L.
 — *see* McMillen, J. M.
 Schmucker, T. **5** 167
 Schnabel, P. **5** 248
 Schneider, B. **2** 42
 Schneider, F. **1** 105
 Schneider-Orelli, O. **1** 152, **3** 83
 Schneiter, F. **5** 73
 Schnell, R. **2** 17
 Schneller, M. R., *see* Adams, W. R.
 Schnur, G. L. **1** 299, **2** 330, **5** 231
 Schober, R. **2** 77
 Schoen, P. W., *see* Chandler, R. F.
 Schoenichen, W. **4** 94
 Scholler, H. **2** 64
 Scholten, J. A. **1** 275
 Scholz, H. F. and Stoeckeler J. H.
 2, 15
 Schön, A., *see* Wacek, A. von
 Schönbach, H. **1** 174
 Schopmeyer, C. S. **1** 155, **257**, **2** 32,
 38, 132
 — *see* Mitchell, H. L.
 — *see* Snow, A. G.
 Schorning, P., *see* Correns, E.
 — *see* Jayme, G.
 Schrader, O. H. **5** 122, 188
 — *see* Grondal, B. L.
 Schramm, J. R. **4** 221, **5** 116
 Schramm, W. O., and Kellogg,
 L. F. **3** 172, 259
 — *see* Emmer, R. E.
 Schreiner, E. J. **1** 137, **2** 209, 276
 — and Duffield, J. W. **4** 91
 — and Huberman, M. A. **2** 116
 Schrenk, H. von **5** 260
 — *see* Schmitz, H.
 Schreuder, E. J. **1** 85
 Schroeder, G. H. **4** 54, **5** 136
 Schröter, H., *see* Brecht, W.

Schubert, A. **3** 106
 Schubert, J. **4** 14
 Schubert, R., *see* Liese, J.
 Schuch, K. **1** 177
 Schuette, H. A., Vogel, H. A., and
 Bain, J. A. **5** 271
 Schulman, E. **3** 86, 120, 173, **4** 196,
 258, **5** 109
 Schultz, E. F. **4** 161
 Schulz, F., *see* Kollmann, F.
 Schulze, B. **1** 98, **4** 41, **5** 38
 — and Theden, G. **4** 238, **5** 124
 — *see* Becker, G.
 — *see* Wicht, H.
 Schumacher, F. X. **1** 300
 — and Chapman, R. A. **4** 256
 — and Day, B. B. **1** 272
 — and Jones, W. C. **2** 307
 — and Young, H. E. **5** 204
 — *see* Bruce, D.
 — *see* Chisman, H. H.
 — *see* Kozlowski, T. T.
 — *see* Lynch, D. W.
 Schumann, H. **3** 118
 Schütz, F. **3** 311
 Schwabe, K. **2** 58
 Schwaradt, H. H. **4** 252
 — *see* Stone, E. L.
 Schwartz, A. **4** 117
 Schwartz, R. T., *see* Oberg, T. P.
 Schwartz, S. L., and Bray, M. W. **3**
 142
 —, Bray, M. W., and Martin, J. S.
 1 284, **2** 58, **4** 39
 Schwartzman, M. **2** 239
 Schwarz, H. **1** 150
 Schwarz, R., and Hennig, T. **5** 122
 (Schwarz, W.), *see* Evenari, M.
 Schweingruber, W. **3** 328
 Schweizer, J. **3** 66
 Schwerdtfeger, F. **1** 154, **2** 23, 29,
 3 83, 170, 251, **4** 132
 Scott, C. W. **1** 48
 Scott, J. D. **2** 325, **4** 182, **5** 293
 Scott, L. I., *see* Priestley, J. H.
 Scott, M. H. **2** 49, 217, 300, **4** 170,
 180, **5** 257
 Scott, W. E. **3** 316
 Scully, N. J. **4** 92, 218
 Seabra, A. F. de **4** 224
 Seabra, L. S. V. de **5** 265
 Sears, P. B. **4** 11, 212, **5** 8, 272
 Seborg, R. M., and Stamm, A. J.
 3 227, 317
 Sechstr, W. C., and Peck, R. H. **5**
 157
 Secrest, H. C., MacAloney, H. J.,
 and Lorenz, R. C. **3** 70
 Sedziak, H., *see* Harkom, J. F.
 Sedgewick, K. G., and MacDonald,
 K. M. **1** 294
 Seekamp, H., *see* Metz, L.
 Seeler, E. V. **2** 120, 290
 Seeley, L. E., and Keator, F. W. **3**
 236
 — *see* Hicock, H. W.
 Seeley, M. G., *see* Anderson, E.
 Seely, H. E. **1** 55, **2** 332, **3** 178,
 4 62
 Segelken, J. G. **3** 325, **4** 180
 — and Mason, M. S. **3** 310

AUTHORS INDEX

Seguerra, J. 2 249
 Seibert, R. J. 2 201
 Seidenschur, F. 1 289
 Seifriz, W. 5 17, 240
 Seigworth, K. J. 1 133
 — and Snyder, J. E. 3 197
 Seitz 1 85
 Seizert, B. F., *see* Liming, F. G.
 Seliskar, C. E. 5 61
 — *see* Stuntz, D. E.
 Selke, A. C. 2 253
 Sell, H. M., Reuther, W., Fisher, E. G., and Lagasse, F. S. 4 217
 Selle, W. 3 15
 Sellers, W. F. 4 160
 — *see* Dowden, P. B.
 Sen, H. K., *see* Thakur, A. K.
 Sen, P. 1 296
 Sen, P. K. 2 135
 Sen Gupta, J. N. 1 151, 161
 — *see* Laurie, M. V.
 Senn, H. A. 5 172
 Senni, L. 1 306, 2 26, 5 130
 Seppänen, O. 5 261
 Seppänen, V. 5 261
 Sergeev, P. N. 3 207
 Serrie, M. de la 1 160
 Servais, P., *see* Baechler, R. H.
 Servazzi, O. 1 141, 2 121
 Sessler, W. M., *see* Spoon, W.
 Sewandono, M. 1 19
 Sexton, A. N. 3 289, 293
 Shadle, A. R. 4 60
 — *see* Gese, E. C.
 Shallenberger, G. D., and Little, E. M. 5 137
 Shank, H. M. 3 242
 Shanks, R. E., and Goodwin, R. H. 5 169
 Shantz, H. L. 1 230
 Sharkov, V. I. 3 53, 4 15
 — and Girchits, A. L. 3 23, 53
 — and Kalina, V. N. 3 68, 4 15
 — and Muromtseva, V. 3 53
 — and Sobetskii, S. V. 5 258
 Sharpe, C. F. S., *see* Ireland, H. A.
 Sharpe, R. H., and Merrill, S. 4 226
 Sharvelle, E. G., *see* Horsfall, J. G.
 Shaternikova, A. N. 1 151, 3 67
 Shaw, B., and Baver, L. D. 2 10
 Shaw, E. E. 2 242, 5 274
 Shchepotiev, F. L. 1 235
 Shear, C. L., and Davidson, R. W. 2 120
 Sheldon, L. M. 5 122
 Shelford, V. E., *see* Clements, F. E.
 Shepard, A. L. 2 236
 — *see* Pessin, L. J.
 Shepard, H. B. 1 187, 3 245
 Shepard, H. H. 3 81
 Shepherd, W. O., *see* Biswell, H. H.
 Sherrard, E. C., Beglinger, E., and Hof, J. P. 1 284
 — *see* Harris, E. E.
 Sherry, S. P. 1 28, 5 14
 Shideler, N. T. 5 125
 Shield, V. I. 2 247
 Shikata, M., and Kimura, Y. 3 60, 142
 —, Kimura, Y., Nakamura, K., and Hachinoe, S. 4 40
 —, Yamane, M., and Kin, H. 2 150

Shimanyuk, A. P. 3 292
 Shimizu, T. 3 313
 Shinn, D. A., *see* Oberg, T. P.
 Shipley, G. B. 4 176
 Shirley, H. L. 5 108
 — and Meuli, L. J., 1 156, 157, 292
 — and Zehngraff, P. [J.] 4 257
 Shishkin, B. 5 130
 Shove, A. G. 5 190
 Show, S. B., Abell, C. A., Deering, R. L., and Hanson, P. D. 3 243
 Shreve, F. 4 93, 5 19
 Shumilina, Z. K. 2 36
 Shunk, I. V. 1 237
 Shustov, B. A. 4 167
 Shutov, P. A. 3 108
 Shuttleworth, S. G. 3 237
 Sibilia, C. 4 58
 Sibiran, F. L. 2 47
 Sidki, I. 3 216, 240
 Siebenmann 1 152
 Siegfried, H. 5 127
 Siegrist, H., *see* Pallmann, H.
 Siemaszko, W. 1 141
 Siggers, P. V. 1 242
 — and Doak, K. D. 3 171
 Sigmond, J. 4 18
 Silberstein, L., *see* Bertrand, G.
 Silcox, F. A. 1 109
 — *see* McCall, M. A.
 Silva, A. G. d'Araujo e, and Almeida, D. G. de 4 193
 Silver, W. H. 5 21
 Simida, H. 3 23
 Siminovich, D., and Levitt, J. 2 290, 3 40
 Simmonds, J. H. 3 71
 Simmons, F. C. 2 163, 4 257
 Simmons, J. E., *see* Miller, P. W.
 Simoda, I., Kimura, Z., and Huzi-wara, T. 2 309
 Simon, P. G. 1 252
 Simpson, A. A. 2 71
 Simpson, G., *see* Thomson, J. S.
 Simpson, G. G., *see* Mason, W. H.
 Simpson, J. H., *see* Linekin, M. G.
 Sims, I. H., Munns, E. N., and Auten, J. T. 1 230
 — *see* Munns, E. N.
 Simon, A. G. 1 103, 3 159
 Sinelobov, E. A., *see* Nikolaev, N. F.
 Singer, R., *see* Bondartzeff, A.
 Singh, B. K., and Saran, B. 5 132
 Singh, B. N., *see* Sampath, S.
 Singh, C., *see* Bhargava, M. P.
 Singh, K., *see* Narayanamurti, D.
 Singh, S. K., *see* Bhargava, M. P.
 Sinha, J. N. 2 111, 254
 Sinn, H., *see* Egner, K.
 Siraki, Z., *see* Osima, Y.
 Sirakov, G. 3 354
 Sisam, J. W. B. 1 26, 86, 266, 3 88
 Sjöström, H. 1 296, 5 251
 Skata-Eirik 2 306
 Skewes, T. J., and Benson, H. K. 1 291
 Skinnemoen, K. 1 192
 Skinner, H. T. 5 136
 Skolko, A. J., *see* Riley, C. G.
 Skorić, V. 1 141, 142, 149

Skorodumov, A. S. 1 230, 3 198
 Skutch, A. F. 4 83
 Slagg, C. M., and Wright, E. 4 55
 (2), 5 138, 276
 Slayvansky, A. K. 4 45
 Sleeth, B. 5 60
 — *see* Lamb, H.
 — *see* Roth, E. R.
 Sleppen, J., *see* Nilsen, J.
 Slifko, C., *see* Muller, J. L.
 Slifko, C. W. 4 106
 Slipp, A. W., *see* Daubenmire, R. F.
 Slooten, D. F. van 4 96
 Slowata, S. S., *see* True, R. P.
 Small, J. 5 131
 Smart, J. 4 81
 Smeathers, R. 5 119
 Smiley, G. R. 2 228
 Smirnov, D. N., and Mednikov, F. A. 3 68
 Smit, J. F., *see* Jager Gerlings, J. H.
 Smith, A. A. 5 146
 Smith, A. C. 1 149, 150, 2 127, 290, 3 36, 115, 116, 294, 4 20, 93, 96, 223, 5 23, 99, 106, 244
 — and Bailey, I. W. 4 21, 97, 5 104
 Smith, C. A. 5 229
 Smith, C. F., *see* Keyes, J.
 Smith, C. O. 2 119, 121, 3 24, 162, 4 221, 248
 Smith, E. C. 2 190, 4 97, 5 166
 — and Nichols, C. 4 16
 Smith, E. H. G. 2 238
 Smith, G. E. P. 5 180
 Smith, H. F. 2 307, 3 192
 Smith, H. P., *see* Dameron, W. H.
 Smith, H. V. 4 11
 Smith, J. 3 280
 — and Petrie, A. M. 1 290
 Smith, J. S. 4 98
 Smith, K. M. 2 85
 Smith, L. F. 2 204, 212, 299, 3 41, 88
 — *see* Stone, E. L.
 Smith, M. E. 5 274
 — and Bayliss, N. S. 4 161
 — *see* Sweetman, H. L.
 Smith, M. R. 2 75
 Smith, N. F. 5 179
 Smith, P. 4 82
 Smith, P. F. 1 262
 Smith, R. A. 5 17
 Smith, R. H. 4 60
 Smith, R. M. 4 200
 Smith, S. 3 88
 Smith, S. G. 3 166
 — *see* Balch, R. E.
 Smith, W. D. 3 244
 Smith-White, S. 2 237
 — *see* Penfold, A. R.
 Smits, B. L., and Peterson, W. J. 5 90
 Smitt, A. 1 162, 5 31
 Smolik, L. 2 119
 Smotlacha, F. 5 275
 Smucker, S. J. 2 285, 3 78, 250, 4 127
 — *see* Buchanan, W. D.
 Smythies, B. E. 1 54
 Smythies, E. A. 1 31, 72, 254, 2 69, 130
 Snell, W. H. 3 161, 248, 340, 4 248

AUTHORS INDEX

- Snow, A. G., 1 21, 237, 260, 3 25, 108, 201, 289, 4 216, 217
—, Dorman, K. W., and Schopmeyer, C. S. 5 238
— and Duffield, J. W. 2 116, 3 27
— see Burkholder, P. R.
— see Westveld, M.
Snow, E. A. 2 71
Snyder, E. 2 198, 3 32
Snyder, J. E., see Seigworth, K. J.
Snyder, T. E. 2 122, 229, 4 116
— and Zetek, J. 3 232
— see Hunt, G. M.
Sobetskii, S. V., see Sharkov, V. I.
Sobrinho, L. G., see Cunha, A. G. da
Sobrinho, V. 3 264, 5 102
Söderqvist, S. V. 1 305
Söderström, E. 3 156
Soest, J. van, see Jager Gerlings, J. H.
Soezima, J., see Nisida, K.
Sokolov, D. V. 1 288, 2 131
Solin, L. 4 262
Solntev, A. A. 4 51
Soliva, R. 2 238
Solomon, S., see Kumar, L. S. S.
Somers, A. J., and Cossey, J. 1 289
Sonderegger, V. H. 2 8
Soraci, F. A. 1 243, 4 133
Sorensen, C. J. 1 185
Sothers, D. B. 4 83
Southam, C. M., and Ehrlich, J. 5 116, 183
Southwell, B. L., see Biswell, H. H.
Southwick, R. W., see Braucher, O. L.
Souza, B. J. de 3 239
Souza Machado, A. A. de 5 272
Sowder, A. M., and Marquis, R. W. 4 212
Soy, F. A. 4 185
Spaak, R., see Butovitsch, V.
Spaeth, J. N., and Afanasiev, M. 1 161
Spangler, F. L. 2 224
Späth, E., and Schläger, J. 4 35
Spatz, R. 4 119
Spaulding, L. H., see Anderson, E. W.
Spaulding, P., Hansbrough, J. R., and Westveld, M. 1 186, 4 225
— and Scheffer, T. C. 2 52
— see Campbell, W. A.
— see Pearce, J.
Speer, W. 1 57, 3 38
Speers, C. F. 4 59
Spencer, D. A. 3 164
Speyer, W. 2 75
Spillers, A. R. 2 8, 183, 4 200
— and Eldredge, I. F. 5 157
— see Faulks, E. B.
Spillsbury, R. H. 5 149
Spitzenberg, G. K. 3 46
Spoon, W. 4 238, 5 130
— and Sessler, W. M. 2 60
Spottiswoode, H. 4 152
Sprecher, A. von 3 155
Sprot, M. 2 64
Spurr, S. H. 2 281
— and Cline, A. C. 4 98, 220
— and Friend, R. B. 3 313
Srivastava, P. D., see Godbole, N. N.
Šrogl, K. 2 331
Stadler, O., see Schläpfer, P.
Stahel, G. 5 19
Stahelin, R. 1 223, 5 28
— see Niederhof, C. H.
Stahl, G. 1 154, 190
Stamm, A. J. 5 36
— and Millett, M. A. 3 134
— and Petering, W. H. 2 225
— and Seborg, R. M. 3 227, 317
— see Bateman, E.
Stamm, E. P. 3 263
Standley, P. C. 2 26, 3 193, 5 173
— and Steyermark, J. A. 3 36, 5 169
Staner, P. 1 150, 248
Stang, A. H., see Whittemore, H. L.
Stankevich, V. E. 2 133
Stankov, S. S. 2 198
Stanwell-Fletcher, J. F., and Stanwell-Fletcher, T. C. 5 240
Staples, R. R. 3 261, 4 88
Stapleton, C. C. 4 228
Starcher, G. C. 2 187
Starker, T. J. 2 153, 4 168, 239, 5 125
Starr, G. H. 2 69
Štastný, J. 5 116
— and Medal, C. K. 5 129
Stathem, P. 2 244
Stather, F., Herfeld, H., and Gottlieb, O. 5 192
— and Sagoschen, J. A. 5 129
Stauch, C. 1 99
Staudacher, E. 5 35
Staudinger, H. 4 108
— and Husemann, E. 4 35, 5 258
— Staudinger, M., and Schmidt, H. 2 223
Stauffer, H. G., see Oeffinger, E. F.
Stearns, J. L. 2 308, 318, 5 86
Steavenson, H. A. 2 133
— and Dodge, A. F. 2 296, 4 88
— Gearhart, H. E., and Curtis, R. L. 5 255
Stebbing, E. P. 3 22, 354
Stebbins, G. L. 3 289
Stecki, K. 1 247
Steel, E. A., see Stevens, W. C.
Steel, J. 1 183
Steenis, C. G. G. J. van 1 26, 3 293, 4 19
Steer, H. B. 2 111, 3 192, 4 213
Stefano, M. del R. 2 77
Stefanoff, D. 4 196
Steffen, E. H., see Nagle, J. P.
Stegeman, J. D., 2 151, 3 327
Stehlé, H. 3 204, 291, 307, 352, 5 21, 133, 241
Steijn, J. A. van 4 148
Steiner, A. J. 5 135
Steiner, E. T., see Clarke, I. D.
Steiner, P. 1 153, 277
Steiner, W. W., see Stoutemyer, V. T.
Steinert, J., see Lüthje, H.
Steinherz, D. 2 151
Steinmetz, F. H., and Hilborn, M. T. 3 53, 5 39
Steldt, F. A., and Chen, K. K. 5 271
Stenstrom, D. G. 5 55
Stentzel, E. 1 96, 3 56
Step, E. 3 114
Stepanov, N. N. 2 188
Stephan, J. T. 5 264
Stephen, J. L., see Mittleman, E.
Stephen, W. J. 2 245
Stephens, C. G. 3 194
— see Taylor, J. K.
Stephens, R. P. 2 235
— and Goldschmidt, W. B. 2 19
Stephenson, J. N. 5 189
Sterling, C. 4 107
Stern, E. 4 43
Stern, E. G. 3 156, 333, 4 245
— see Bernhard, R. K.
Steup, F. K. M. 3 264
Steven, H. M. 3 43
Stevens, D. R., see Hurley, P. J.
Stevens, O. A. 4 94
Stevens, R. D. 2 249
Stevens, S. R. 3 95
Stevens, T. D., and Panshin, A. J. 5 259
Stevens, W. C. 1 42, 45, 182, 275
— and Dill, F. E. 3 31
— and Johnston, D. D. 3 63, 4 43
— and Steel, E. A. 2 320
— and Turner, N. 3 318, 4 38, 115
Stevenson, D. D. 3 150, 4 166
— and Bartoo, R. A. 1 89, 3 68
— and Meyer, H. A. 2 252
Stevenson, J. A. 2 193
Stevenson, J. W., see Biswell, H. H.
Stevenson, N. S. 1 55, 227, 2 129, 4 157
Stewart, B. K. 3 97
Stewart, C. G. 5 41
Stewart, D. 2 63
Stewart, D. W. R. 3 337
Stewart, G. 3 177, 4 125
— and Widtsoe, J. A. 5 213
— see Cottam, W. P.
Stewart, J. K. 1 175
Stewart, J. L. 4 153
Stewart, W. T., see Anderson, E.
Steyermark, J. A. 5 23
— see Standley, P. C.
Stickel, P. W. 2 156, 196, 243, 244, 3 160
Stingily, K. O. 4 138
Stoate, T. N. 1 196, 265, 3 87, 350, 4 195
— and Bednall, B. H. 2 249
— and Harding, J. H. 2 244
— and Lane Poole, C. E. 1 12, 203
— and Wallace, W. R. 1 23
— see Kessell, S. L.
Stobbe, P. C. 2 165
Stöck 4 37
Stockwell, P. 5 15
Stockwell, W. P., 1 137, 3 30
— see Mirov, N. T.
Stoddard, C. H. 2 333, 4 140, 5 71, 72
Stoddard, E. M., see Dimond, A. E.
Stoeckeler, J. H., and Aamodt, E. 3 46
— and Bates, C. G. 1 75
— and Dortignac, E. J. 3 131
— and Limstrom, G. A. 4 104
— and Sump, A. W. 2 209
— see Engstrom, H. E.
— see Scholz, H. F.

AUTHORS INDEX

- Stoffels, A. 1 52, 2 70
 Stojanoff, W. 3 51
 — and Tamamdschieff, L. 3 52
 Stolz, E. 5 51
 Stone, E. L. 4 125, 5 136
 — and Schwardt, H. H. 5 285
 — and Smith, L. F. 3 335
 — and Stone, M. H. 5 167
 — see Wilde, S. A.
 Stone, M. H., see Stone, E. L.
 Storch, K., and Müller, O. 3 136
 Storie, R. E. 4 214
 Stork, H. E. 3 133
 Story, H. D. 2 133
 Stott, C. B. 4 197, 5 248
 — and Ryan, E. J. 1 106
 Stout, D. C., see Grant, T. J.
 Stoutemyer, V. T. 1 262
 —, Jester, J. R., and O'Rourke, F. L. 2 213
 — and O'Rourke, F. L. 5 14
 —, O'Rourke, F. L., Steiner, W. W., and Giles, W. L. 4 89
 Stover, W. S. 2 183
 Strachan, J. 4 244
 Strandine, E. J. 3 38
 Stratonovitch, A. I. 1 151, 161, 184
 Straub, A. E. 3 242
 Strauss, C. W. 2 251, 3 177, 4 52
 Strausz, H. J. 3 326
 Strele, G. 3 154
 Stretton, G. B. 5 204
 Streyyoff, T. 1 311, 4 261, 5 207, 290, 291
 Strickland, C. 1 91
 Strohmeier, G. 1 22, 36
 Strong, F. C. 3 161, 4 126, 187
 — and Cation, D. 3 247
 Struble, G. R. 5 65, 202
 — and Carpelan, L. H. 4 160
 Strugnell, E. J. 1 28, 92, 2 208, 3 85, 171, 259
 Stryla, S. 1 173, 174, 273, 274
 — see Rafalski, J.
 Stubnya, D. 4 215
 Studeny, J., and Libby, C. E. 1 284
 Studhalter, R. A., and Glock, W. S. 4 53 (2), 245
 Stump, W. G., see Larsen, J. A.
 Stuntz, D. E., and Seliskar, C. E. 5 278
 Sturgeon, E. E., see Kramer, P. R.
 Sturm, H. 5 245
 Stux, S., see Reitzer, M.
 Styles, S. A., see Roberts, O.
 Suarez, V. 1 41
 Subba Rao, M. K. 5 136
 Subklew, W. 1 154
 Süchting, H. 1 231, 3 104, 4 86, 87, 5 159, 175
 Suenaga, H., see Kawada, A.
 Sunson, E. 4 108
 Sugihara, Y., see Kôno, H.
 Sukachev, V. N. 4 157
 Sulit, C., and Tabat, E. 2 237
 Sulit, M. D. 3 89
 Sulit, M. S. 3 214
 Sullivan, W. N., see La Forge, F. B.
 Sultan Mohammed, see Limaye, V. D.
 Sumarokov, V. P., and Klinskikh, E. V. 5 126
 Sumihiko, H., see Kanehira, R.
 Summerhayes, V. S. 2 201, 3 37
 Summerhays, W. A. 4 176
 Summers, T. W. 1 226
 Sump, A. W., see Stoeckeler, J. H.
 Sumstine, D. R. 3 249
 Sundberg, C. G. 3 225
 Sung, R. H. L. 3 69
 Sutherland, J. W. 3 240
 — see Linekin, M. G.
 Sutliff, C. B. 2 242
 Süttinger, R., see Brecht, W.
 Suyama, G., see Kawashima, R.
 Suzuki, S., see Nakazima, Y.
 Svedberg, T., see Mosimann, H.
 Svenson, H. K. 1 248, 4 93
 Svensson, I. A. 1 197, 281
 Svensson, R. 5 261
 Sviridenko, P. A. 2 247
 Sviridov, N. 4 45
 Svoboda, P. 3 109
 Švorc, J. 5 49
 Swabey, C. 1 126, 227, 2 9, 82, 127, 3 38, 153, 307, 5 70
 — see Croucher, H. H.
 Swain, R. B. 1 250
 Swamy, B. G. L. 4 15
 Swan, O. T. 1 280
 Swanson, H. E. 1 295
 — see Offord, H. R.
 Swanson, T. B., see Barry, P. A.
 Swarbrick, T. 4 235
 Swart, F. 1 126, 2 39, 4 264
 Swarthout, P. A., see Boggess, W. R.
 Swartley, J. C., and Chadwick, L. C. 3 201, 4 216
 Swayne, A. P., see LeBarron, R. K.
 Sweetman, H. L. 3 256
 — and Smith, M. E. 4 254
 Swenning, K. A. 3 91
 Swickard, D. A. 3 191
 Swingle, C. F. 2 212
 Swingle, R. U. 2 18, 4 250
 —, Tilford, P. E., and Irish, C. F. 3 80
 Swingler, W. S. 3 224
 Sykes, G. G. 1 233
 Sykes, R. A. 2 188
 Sylvain, P. 1 265
 Sylvan, S. G. 3 150
 Sylvén, N. 1 139, 3 39, 4 93, 5 15, 95, 165, 201, 235, 237
 Symington, C. F. 1 249, 2 210, 4 222, 5 163
 — see Watson, J. G.
 Syrach Larsen, C. 5 250
 Zafer, W. 1 224
 Szántó, I. 3 18
 Szelényi, G. von 4 97
 Szenes, L. 3 183
 TABAT, E., see Sulit, S.
 Tabata, S., and Tamanuki, K. 3 83
 Taborovsky, E. 2 60
 Tadokoro, T., and Kobayashi, S. 2 221
 Taesler, W., see Zietzschmann, E.
 Tahara, M. 4 17
 Taher Sayed, M. 5 286
 Takahashi, R. 4 133
 Takauto, E., see Nakamura, H.
 Tal'man, P. N. 4 193
 Tamai, T. 3 127
 Tamblin, N. 4 236
 Tamamdschieff, L., see Stojanoff, W.
 Tamanuki, K. 3 82, 343
 — see Tabata, S.
 Tamm, O. 1 253, 4 85
 Tammes, P. M. L., and Vlies, A. P. van der 2 319
 Tamplin, H. L. 4 174
 Tamura, T., see Hattori, T.
 Tanasescu, N. 2 168
 Tandan, K. N., see Chowdhury, K. A.
 Tang, T., see Hu H.-H.
 Tanner, V. M. 3 291
 Tansley, A. G. 1 202, 2 124
 — see Godwin, H.
 — see Richards, P. W.
 Taran, E. N. 3 68
 Tarasikov, N. A., see Yaichnikov, I. S.
 Tartakowsky, S. G., and Arentsen, S. T. 5 138, 281
 Tasker, H. S., see Fisher, R. C.
 Tattersfield, F., Martin, J. T., and Howes, F. N. 2 236
 Taylor, A. J. 2 318, 4 183
 Taylor, C. A. 4 25, 226
 Taylor, J. E. 3 333, 4 184
 Taylor, J. K., and Stephens, C. G. 5 162
 — see Penman, F.
 Taylor, J. P. 5 121, 267
 Taylor, N. H., see Burns, M. M.
 Taylor, P. K. 2 244
 Taylor, R. F. 1 280
 Taylor, R. L., and Chestnut, A. F. 4 191
 Taylor, W. P., see Lay, D. W.
 Taylor-Vinje, M. 3 137
 Tazoye, H. 2 129
 Teesdale, L. V. 5 258, 261, 267
 Tehon, L. R. 4 190, 248, 249, 5 59, 62, 139
 — and Carter, J. C. 5 282
 — and Harris, H. A. 3 249
 — and Jacobs, H. L. 2 245
 Telford, C. J. 2 307, 3 59, 4 39, 5 121, 185
 Telford, R. C. 5 145
 Tempel, W. 1 189
 Temperton, H. 5 194
 Templeman, W. G., see Metcalfe, C. R.
 Teng, S. G. 3 341
 Teng, S. C. 4 98, 5 139
 Tenger, C. G. 3 61, 4 180
 Teramoto, T. 3 142
 Terman, C. C. 2 299
 Ternstedt, B. 3 156
 Terrier, C. A. 4 56
 Terry, E. I. 3 176
 Terry, M. 3 116
 Terry, W. Z. 4 219
 Tesdorff, 4 88
 Tessier, G.-A. 2 311
 Thakur, A. K., Bhowmik, T., and Sen, H. K. 1 102
 Thalenhorst, W. 1 154, 155, 2 28, 74, 3 345, 5 64

AUTHORS INDEX

- Tharp, B. C. **4** 19
 Thatcher, T. O. **4** 224
 Theden, G., *see* Schulze, B.
 Theden, J. **4** 189
 Thiele, E. **1** 45
 Thielmann, K. **1** 298
 Thiem, H. **1** 189
 Thimann, K. V. **1** 134, **3** 26
 — and DeLisle, A. L. **1** 90, **4** 16
 Thirumalachar, M. J. **4** 56
 — and Khan, K. B. A. **4** 89
 Thistle, M. W., *see* Grace, N. H.
 Thomas, A. J. **1** 94
 — and Langlands, I. **2** 87, **4** 53, **120**
 — see Langlands, I.
 Thomas, A. S. **2** 42, **3** 291, **4** 159,
 5 17, **132**, **239**
 Thomas, A. V. **1** 94, 98, 99, 169, 183,
 2 50, **153**, **302**, **3** 220
 — *see* Desch, H. E.
 Thomas, J. O. **1** 184
 Thomas, W. D. **3** 103, **283**, **5** 11
 Thompson, A. R. **1** 298, **2** 212, **4** 188,
 246, **5** 274
 Thompson, C. H. **2** 165
 Thompson, G. E. **1** 141, **3** 163
 Thompson, N. F., *see* Chambers,
 E. L.
 Thompson, W. G. **3** 57
 Thomsen, A. M. **3** 150
 Thomsen, M. **1** 239, **2** 23
 Thomson, J. S., and Simpson, G.
 4 186
 Thomson, J. W. **2** 289, **5** 103
 Thomson, R. B. **2** 24, **333**, **5** 69
 Thomson, T. **2** 118
 — and Jerram, M. R. K. **1** 309
 Thomson, W. G. **2** 250, **3** 305
 Thorenaar, A. **3** 301, **316**
 Thoresen, C. T. **4** 164
 Thornley, H. F., *see* Knowlton, G. F.
 Thorogood, A. L., *see* Barr, G.
 Thunell, B. **2** 50, **4** 33, **108**, **232**, **5**
 182, **183**
 Thiebe, H. **3** 202
 Tiemann, H. D. **2** 227, **310**, **3** 55,
 135, **313**, **4** 34, **229**, **5** 129, **267**
 Tien, Y. W., *see* Hsu, S. H.
 Tikhomirov, B. I. **1** 224
 Tikhomirov, B. A., *see* Budkevich,
 E. V.
 Tikka, P. S. **5** 272
 Tikos, B. **3** 105
 Tilford, P. E. **2** 325, **5** 275, **282**
 — *see* Swingle, R. U.
 Tilicheev, M. D. **2** 232
 Till, D. **3** 343
 Tillander, T. **2** 215, **3** 118
 Tillotson, C. R. **1** 266, **4** 226
 Tillson, A. H., and Muller, C. H.
 4 231
 Tilton, W. G. **3** 92
 Timofeev, V. P. **1** 243, **4** 225
 Tincker, M. A. H. **3** 24
 Tinsley, S. L. **1** 257
 Tionson, C. **2** 27, **4** 62
 Tippo, O. **3** 50, **4** 169
 Tirén, L. **5** 30, **177**, **249**, **252**
 Tischendorf, W. **4** 62, **134**, **5** 247,
 286
 Tisdale, H. R. **4** 121
 Titiya, M., Hukuhara, S., and Kato,
 Y. **4** 175
 Titus, H. W., *see* King, T. R.
 Tkachenko, M. E. **3** 19
 Tobler, J. **3** 150
 Tolkahev, A. K. **4** 50
 Tolstead, W. L. **3** 204, **4** 157
 Tolunay, M. **4** 128
 Toma, G. T. **4** 63
 Tomkeiff, S. I., and Blackburn,
 K. B. **5** 155
 Tondeur, G. **1** 56, **150**, **161**
 Toney, W. **5** 48
 Tooke, F. G. C. **2** 248, **5** 285
 — and Hubbard, C. S. **5** 142, **202**
 Toole, E. R. **1** 82, **3** 162
 — and Buchanan, T. S. **3** 84
 — *see* Boggess, W. R.
 — *see* Hepting, G. H.
 Topcuoglu, A. **4** 135
 Topham, P., *see* Clements, J. B.
 Torgeson, O. W. **3** 233, **234**
 Torres, J. P. de **3** 308, **5** 113
 Torricelli, E. **5** 181
 Torti, P. **4** 88
 Tortorelli, L. A. **3** 261, **332**, **4** 106,
 5 244, **275**
 Tosh, J. P. **4** 159
 Touchet, L. **5** 10
 Tousley, F. J. **5** 49
 Toussaint, E. **1** 158
 Tower, G. E. **5** 55
 Townsend, C. L. **3** 57
 Townsend, C. R. **1** 178
 Townsend, J. F., *see* Turner, N.
 Tozer, D. **5** 25
 Trägårdh, I. **1** 238, **2** 53, **303**, **4** 131,
 5 200
 Travis, B. V., and Decker, G. C. **2**
 160
 Trayer, G. W., *see* Newlin, J. A.
 Traylor, W. N. **5** 131
 Traynard, P., *see* Guillemonat, A.
 Treloar, J. S. **2** 61
 Treloar, L. R. G., *see* Tristram,
 G. R.
 Trendelenburg, R. **1** 94, **201**, **227**,
 272, **5** 39
 Trenk, F. B., *see* Wilde, S. A.
 Treschow, C. **5** 20
 — *see* Jørgensen, C. A.
 Tressler, C. J., and Zimmerman,
 W. I. **5** 54
 Trevor, Sir Gerald, *see* Champion,
 H. G.
 Trevor, J. S. **2** 61
 Trimble, F. M. **5** 99
 Trimble, G. R. **2** 162, **4** 256, **5** 261
 Tristram, G. R., Gee, G., Treloar,
 L. R. G., and Jeffrey, G. A. **5** 195
 Trocchi, F. B. da **3** 308
 Troitski, V. A. **1** 232
 Trombetta, V. V. **4** 90
 Trotter, H. **1** 47, **3** 306, **4** 29
 Troup, R. S. **2** 257
 Trout, G. H. **2** 230
 Truax, T. R. **1** 293, **2** 225
 True, R. P. **3** 164
 — and Slowata, S. S. **1** 189, **2** 21
 Trumbull, H. L. **5** 133
 Truog, E., *see* Bower, C. A.
 Tryon, H. H. **1** 122, **282**, **4** 53
 — and Finn, R. F. **2** 185, **4** 151, **167**,
 168
 Tschermak, L. **1** 33, **2** 24, **25**
 Tschernaef, P. **3** 55
 Tsiopkalo, V. L. **2** 75
 Tucker, C. M., and Milbrath, J. A.
 4 126
 Tucker, R. W. E. **2** 311
 Tumadjanov, I. I. **1** 148, **2** 198
 Tuomola, T. **1** 173
 Turberville, H. W., and Hough,
 A. F. **1** 193
 Turetskaya, R. Kh., *see* Chay-
 lakhyan, M. Kh.
 Turk, L. M. **5** 232, **253**
 Turnbull, J. M. **2** 64, **301**, **4** 171,
 172, **5** 17, **256**
 — and Krogh, P. M. D. **2** 50
 Turnbull, R. F., *see* Cummins, J. E.
 Turner, E. L., *see* Hanson, P. D.
 Turner, H. **5** 146
 Turner, J. S., and Watt, A. S. **1** 84
 Turner, L. M. **2** 281, **5** 289
 Turner, N. **3** 61, **145**
 — and Townsend, J. F. **2** 53
 — *see* Stevens, W. C.
 Turrell, F. M., and Fisher, P. L.
 3 221
 Turrill, W. B. **4** 220
 Tuthill, L. D. **5** 174
 Tutiya, M., and Imai, M. **5** 123
 — and Kato, Y. **5** 45
 Tuyama, T. **2** 124
 Tuyt, P. **1** 259
 Twinn, C. R. **5** 140
 Tyler, L. J., Parker, K. G., and
 Pope, S. **2** 21
 — *see* Parker, K. G.
 Tyron, E. H. **5** 273
 Tyszkiewicz, S. **1** 34
 UEĐA, Y., and Nebu, T. **2** 143, **3** 221
 Ugrenović, A. **4** 34, **232**
 Uhlmand, R. E. **1** 292
 Uichanco, L. B. **2** 195
 Umezu, M., *see* Hachihama, Y.
 Umrand, C. B. **5** 110
 Undén, N. **1** 177
 Ungváry, J., *see* Lintner, B.
 Unna, K., *see* Folkers, K.
 Unwin, P. T. **4** 188
 — *see* Payne, H.
 Upson, A. **4** 264
 Uris, A. W. **5** 44
 Urquhart, B. P. **5** 109
 Urquhart, D. H. **3** 182
 Urquijo Landaluze, P. **4** 191, **249**
 Urvoy, Y. **1** 147
 Usio, Y. **4** 119
 Uys, C. J. **3** 332
 VACHAT, F. du **1** 160
 Vageler, P. **5** 233
 Vági, I. **2** 12, **186**, **281**
 Vajda, E. **1** 25
 Valin, R. **4** 111
 Vall, W. B. de **5** 175
 Valteau, W. D., *see* Leach, J. G.

AUTHORS INDEX

Vanin, S. I. 1 170, 2 219
 Vanselow, K. 1 86, 4 102, 5 255
 Varian, H. F., and Gallardo, A. C. 3 138
 Varma, B. S., and Dey, A. C. 5 269
 — see Ghose, T. P.
 — see Krishna, S.
 — see Ramaswami, S.
 Varner, R. W., see Baxter, D. V.
 Vasconcellos, J. de C., see Rothmaler, W.
 Vasechkin, V. S. 3 68
 Vashkulat, P. N. 1 248
 Vasilevskaya, L. M. 1 145
 — see Djaparidze, L. I.
 — see Yatsenko-Khmelevski, A. A.
 Vasilii, V. 3 355
 Vassiliev, V. N. 5 172
 Vaughn, D. B., see Davidson, R. W.
 Vaughn, R. E., and Wiehe, P. O. 1 244, 3 33
 Vaughn-Eames, H. 5 104
 Vautherin, H. M. A. 5 46
 Ve, S. 5 158
 Veen, R. van der 4 234
 Venemark, E. 4 41
 Veness, J. C. 4 201
 Verhoef, L. 1 27, 3 297
 — see Koopman, M. J. F.
 Verrall, A. F. 1 277, 3 144, 312, 4 221, 5 48, 103
 Verwoerd, L., see Wyk, J. H. van
 Vesey-Fitzgerald, D. 2 199
 Vesper, H. G. 4 37
 Vestal, A. G. 5 209
 Vestal, P. A. 3 48
 Viado, J. 1 36, 38
 Vianna, E. F. 5 249
 Vicent, G. 1 89
 Vickery, J. W. 3 294
 — see Fraser, L.
 Viégas, A. P. 2 289
 Vignolo-Lutati, F. 4 93
 Viktorov, S. 3 299
 Villar, E. H. del 1 128
 Villeneuve, G. O. 3 242
 Vincent, G. 3 124, 4 91
 Vincent, R. S. 1 290
 Vinson, C. G., and Cross, F. B. 5 130
 Vintila, E. 1 274
 Virasoro, E. 5 37
 Vivani, P., see Goidànich, G.
 Vlies, A. P. van der 3 238
 — see Tammes, P. M. L.
 Voelkel, H., and Klemm, M. 1 104
 Vogdt, O. 5 251
 Vogel, F. H. 2 222
 Vogel, H. A., see Schuette, H. A.
 Vogel, K. 1 192, 281
 Vogelsang, P. 4 22, 156
 Vogt, A. E., see Kirchhoff, L.
 Vogt, K. 1 297
 Volkert, E. 3 241, 4 53, 169
 Vollmer, H. 1 96
 Volodutskaya, Z. M., see Derevyagin, A. A.
 Voorhies, G. 1 100, 3 322, 5 49, 56
 Vorley, J. S. 3 300
 Vorreiter, L. 1 42, 94, 4 51, 174
 Voskresenskaya, A. K. 4 194
 Voss 3 120

Voss, J. 1 224
 Voth, P. D. 2 9
 Vreeling, L. 3 343
 Vries, van B. W. de 1 185
 Vshivtsev, N. N. 3 67
 Vyacheslovskaya, D. I., see Liozin, M. F.
 Vysozki, P. G. 4 239
 WABRA, A. 1 90
 Wacek, A. von 1 42
 — and Schön, A. 4 15
 Wach, A. 4 102, 164
 Wackerman, A. E. 3 314, 4 37, 110, 112, 173, 184
 Wade, B. F. 2 65
 Wadhvani, B. B. 5 111, 162
 Wadsworth, F. H. 1 270, 4 225, 5 23, 70, 109, 173, 197
 — and Pearson, G. A. 2 112, 3 177, 5 175
 — see Baxter, D. V.
 Wagar, J. V. K. 5 291
 Wagener, W. W. 1 142
 Wagenhoff, A. 1 22
 Wagenknecht, E. 1 83, 235, 3 120, 168, 4 25
 Wagner, E. 4 240
 Wagner, E. C., see Henry, B. W.
 Wagner, H. 5 267
 Wahl, B. 5 66
 Wahlberg, H. E. 3 242, 306
 Wahlberg, W. G. 2 215, 4 258
 —, Greene, S. W., and Reed, H. R. 1 159
 Wahlsteen, H. 3 265
 Wainio, W. W., and Forbes, E. B. 3 239
 Wakefield, W. E. 4 174
 Wakeley, P. C. 2 210
 Wald, E. Y. 1 227
 Waldenström, E. 4 81
 Waldo, H. C. 3 245
 Waldron, A. F., see Moore, E. B.
 Wales, H. B. 1 265
 Walker, E. H. 3 36, 4 96
 Walker, F. S. 1 30, 46, 3 309, 321
 Walker, G. 4 122
 Walker, W. 4 113
 Walkington, D. 4 118
 Walkom, H. C. 1 160
 Wallace, H. A., see McCall, M. A.
 Wallace, P. P., and Beard, R. L. 4 160, 224, 5 24
 Wallace, R. H., and Moss, A. E. 2 191
 Wallace, T. 5 136
 Wallace, W. G. 2 38
 Wallace, W. R., see Stoaite, T. N.
 Wallihan, E. F. 1 128, 2 14
 Wallman, P. H. 1 289
 Wallner, O. 3 179, 244
 Walsh, G. B. 5 245
 Walsh, J. D. 5 120
 Walter, H. 1 231, 246
 Walter, J. M., and May, C., 2 193
 — and Mook, P. V. 2 20, 3 77
 —, Mook, P. V. and May, C. 2 193, 3 158
 Walters, C. S. 3 159, 5 125

Walton, A. B. 1 39, 2 232
 Walton, A. T., see Benson, H. K.
 Waltz, R. S., see Metcalf, W.
 Wangaard, F. F. 2 220, 5 35
 Wappes, L. 3 44, 4 102
 Warburton-Brown, D. 5 44
 Ward, A. T. 4 115
 Ward, F. K. 3 205, 291
 Ward, G. B. 2 81
 Ward, W. W. 3 160
 Wardrop, T. N. 4 27
 Wardyn, A., see Rafalski, J.
 Warlick, P. W., see Hepting, G. H.
 Warne, L. G. G. 5 91, 181
 Warner, R. M., and Aikman, J. M. 5 242
 Warren, G. H. 3 217
 Warren, W. D. M. 1 102, 2 130, 3 43, 102, 4 149, 152, 5 87, 233
 Watanabe, C. 1 250, 3 252, 4 131
 Watanabe, M., Yasuda, T., Kawase, K., and Kimura, Y. 4 39
 Watanabe, T. 4 38
 Waterer, R. R. 1 303
 Waterman, A. M. 3 338, 5 277
 — and Aldrich, K. F. 2 192
 — see Potts, S. F.
 Waterston, J. M. 3 61
 Watkins, K. S. 2 46
 Watson, A. J. 3 163
 — see Lohman, M. L.
 Watson, C. J. J. 2 44, 5 44
 Watson, Sir H. 1 200, 2 110, 3 279
 Watson, J. E. 3 73
 Watson, J. G. 1 55, 306, 2 218, 3 19
 —, Symington, C. F., and Durant, C. L. 2 288
 Watson, L. 2 34
 Watt, A. S., see Richards, P. W.
 — see Turner, J. S.
 Watt, R. D., see Beecher, H. W.
 Watts, L. F. 3 354, 5 232, 290
 Weakly, H. E. 3 86, 5 287
 Wean, R. E., and Guard, A. T. 2 295, 3 124, 302
 — see Guard, A. T.
 Weaver, H. 5 32
 Webb, R. A., see Birkinshaw, J. H.
 Webber, I. E. 4 31
 Webber, J. M. 3 28
 Webber, L. E. 3 329, 4 52
 Weber, C. G., and Weissberg, S. G. 1 168
 — see Jessup, D. A.
 Weber, G. F. 4 57
 — see Davidson, R. W.
 Webster, C. B., and Ratcliffe, G. T. 4 25
 Webster, C. C. 1 291, 2 237
 Webster, R. M., see Wilson, L. R.
 Wechsel, A. te 1 278
 Weck 1 198
 Weddell, D. J. 4 249
 Wedderburn, L. C. M. 4 64
 Wegelius, T. 1 176, 4 40, 5 49, 184
 Wehmeyer, L. E. 2 200, 289
 Wehrwein, G. S., see Ely, R. T.
 Wei, C. T. 5 243
 Weidman, R. H. 2 116
 — see Haig, I. T.
 Weidner, J. P. 1 284

AUTHORS INDEX

Weikert, H., *see* Clotofsky, E.
 Weinkauff, R. 4 87
 Weiss, F. 2 192
 — and Baumhofer, L. G. 3 303
 Weiss, H. L., *see* Hoback, W. G.
 Weissberg, S. G., *see* Jessup, D. A.
 — *see* Weber, C. G.
 Weiss-Wichert 4 254
 Weisz, L., *see* Grossmann, H.
 Wejdmak, P. 2 241
 Welander, P. O. 5 254
 Welch, D. C. 1 270
 Welch, D. S. 4 185
 Weld, E. A., *see* Baldwin, H. I.
 Weller, R. A., *see* Lugg, J. W. H.
 Wellner, C. A. 2 252, 3 339
 — and Hansen, R. 5 143
 — *see* Fahnestock, G. R.
 Wells, B. W. 2 25, 4 218
 Wells, H. 3 318
 Wells, T. 2 39
 Wellwood, R. W. 5 69
 Welsh, D. S. 3 258
 — and Collins, D. L. 3 163
 Wendover, R. F. 2 147
 Wenning 2 81
 Wennmark, G. 1 302
 Went, F. W. 5 233
 Went, J. C. 4 249
 — *see* Krijthe, N.
 Wentling, J. P. 4 179
 Wentworth, P. M. 1 294
 Wenzl, H. 5 200
 Werner, A. 5 264
 Wershing, H. F. 4 188
 — and Bailey, I. W. 4 110
 West, A. S. 3 344
 West, E., MacGregor, W. S., Evans, T. H., Levi, I., and Hibbert, H. 5 183
 —, MacInnes, A. S., and Hibbert, H. 5 183
 West, J. 3 281, 4 51
 West, K. A., and Hibbert, H. 5 183
 West, R. F. 4 185
 West, W. I. 3 308
 Westerbeke, D., *see* Anderson, E.
 Westergaard, M., *see* Gram, K.
 Westgate, M. W. 5 270
 Westman, R. 3 159
 Westveld, M. 1 32, 3 351, 4 29, 213
 — and Snow, A. G. 2 207
 — *see* Belotelkin, K. T.
 — *see* Recknagel, A. B.
 — *see* Spaulding, P.
 Westveld, R. H. 1 205, 3 15
 Wetmore, L. L. 2 320
 Wetmore, R. H., *see* Heimsch, C.
 Wetmore, T. H., *see* Kramer, P. J.
 Wettstein, W. von 3 107, 109, 201, 4 90, 91, 156, 5 45
 — and Propach, H. 1 237
 Weyrauch, W. 4 255
 Whalen, T. F., *see* Linekin, M. G.
 Whalley, W. B., *see* McGookin, A.
 Wheatley, A. B. 5 212
 Wheeler, B. R. 3 268
 Wheeler, G. T., *see* Napier-Bax, S.
 Wheeler, P. R. 2 249
 — *see* Cruikshank, J. W.
 Whipple, S. C., and Price, M. W. 3 58

Whistling, F., *see* Francke, C.
 Whitby, G. S. 1 243
 White, A. A., *see* Merritt, R. W.
 White, A. R. 5 40
 White, C. T. 3 37, 4 20
 White, D. P. 4 87
 White, F. O. 2 156
 — and Atkinson, C. C. 2 67
 White, H. G. 4 261
 — *see* Cunningham, R. N.
 White, J. 4 175
 White, N. H., *see* Ludbrook, W. V.
 White, W. T. 5 44
 Whitfield, C. 4 45
 Whitford, A. C. 5 55
 Whiting, A. E. 5 240
 Whitnall, G. 5 254
 Whitney, C. N. 1 244, 2 184, 3 100, 4 178
 — and Hutchison, S. B. 2 83
 Whitney, C. S. 5 258
 Whitney, R. L. 2 224
 Whitney, W. R. 4 60
 Whittemore, H. L., and Stang, A. H. 3 69
 Whitten, R. R. 5 66
 — and Baker, W. C. 2 160
 —, Potts, S. F., and Francis, E. H. 4 133
 — *see* Potts, S. F.
 Whyland, W. P., *see* Lumsden, G. Q.
 Whyte, R. O., *see* Jacks, G. V.
 Whyte, S., *see* Lang, A. A. D.
 Wicht, C. L. 2 276, 3 197, 281, 4 153, 5 233
 — *see* Reinecke, O. S. H.
 Wicht, H., and Schulze, B. 1 287
 Wickett, H. C. 3 330, 334
 — *see* Asch, H. P. D. van
 — *see* Pryor, L. D.
 Wicklund, H. T. 2 71
 Widtsoe, J. A., *see* Stewart, G.
 Wiechert, K. 1 276, 2 302
 Wiedemann, E. 1 53, 2 77, 5 12, 248
 Wiehe, P. O. 3 162
 — *see* Vaughn, R. E.
 Wieler, A. 1 18
 Wienhaus, H. 2 66
 Wiesehuegel, E. G. 3 262
 Wieslander, A. E., and Wilson, R. C. 5 288
 Wigelius, E. 1 282
 Wigg, L. G. T. 2 40
 Wiggins, I. L. 3 32
 Wilcox, F. R. 1 54, 194
 Wilcox, R. F. 2 166
 Wilde, M. H. 5 98
 Wilde, S. A. 1 78, 2 14, 3 195, 287, 5 10
 — and Albert, A. R. 4 166
 — and Kopitke, J. C. 2 137
 — and Patzer, W. E. 2 293
 — Trenk, F. B., and Albert, A. R. 4 87
 — and Wittenkamp, R. 1 77, 4 151
 —, Wittenkamp, R., Stone, E. L., and Galloway, H. M. 2 298
 — *see* Brenner, W. H.
 — *see* Rosendahl, R. O.
 Wilford, B. H. 2 213
 — *see* Craighead, F. C.

Wiljamaa, L. E. 4 134
 Wilke, A. 4 175
 Wilkes, A. 4 255, 5 64
 Wilkins, E. G. 5 194
 Wilkins, W. H. 1 139, 140
 Wilkinson, D. S. 2 127
 Wilkinson, G. 1 86, 2 147
 Wilkinson, J. 3 111
 Will, H. C. 4 253, 5 141
 Willan, R. G. M. 1 254, 2 125
 Willans, K. W. 2 64
 Willey, E. C. 4 244, 5 51
 Williams, A. N. 3 324
 Williams, C. B. 5 168
 Williams, E. T. 5 186
 Williams, G. J., and Eades, N. W. 1 131
 Williams, L. 1 271, 2 155, 3 281, 4 84, 93
 Williams, R. O., and Williams, R. O. Jr. 3 203
 Williams, S. 1 170, 4 32
 Williamson, J. S. 4 113
 Williamson, P. 1 270
 Willison, C. H. 3 120, 5 207
 Willman, H. J., *see* Aro, P.
 Willscher, O. 3 313
 Wilm, H. G. 4 153
 — and Niederhof, C. H. 4 88, 5 32
 Wilson, C., and Wilson, M. 5 24
 Wilson, D. M. 4 239
 Wilson, E. 1 164, 3 262
 Wilson, H. 2 156
 Wilson, H. B. 3 138, 145, 4 36, 116
 — and Gregory, J. N. 4 43
 Wilson, H. M. 4 37
 Wilson, I. T., and Potzger, J. E. 4 11, 5 156
 Wilson, J. D., and Paton, R. R. 1 227
 Wilson, J. K. 1 145
 Wilson, J. O. 2 8
 Wilson, L. R. 3 97
 — and Webster, R. M. 5 9, 231
 Wilson, M., *see* Wilson, C.
 Wilson, M. R. 3 85
 Wilson, R. C. 4 149
 — *see* Burks, G. F.
 — *see* Wieslander, A. E.
 Wilson, S. A. 5 72
 Wilson, S. E. 2 44, 3 172, 180, 259, 4 62, 175, 5 144
 Wilson, T. R. C. 1 291, 2 302
 — *see* Scheffer, T. C.
 Wilson, W. F., *see* Kimbrough, W. D.
 Wilson, W. T., and Reid, J. W. 5 292
 Wimbush, S. H. 2 279, 4 163, 170, 224, 5 48, 173
 Wind, R. 4 330
 Wingard, S. A. 3 338
 Winklepleck, R. L., and McClintock, J. A. 3 200
 Winslow, C. P. 1 185, 270, 284, 3 89, 4 236
 Winters, R. K. 1 185, 3 178
 —, Putnam, J. A., and Eldredge, I. F. 1 126
 — *see* Hutchison, S. B.
 Wirka, R. M. 1 287, 2 313, 3 326
 Wirt, G. H. 5 290
 Wise, L. E., *see* Bloom, P.

AUTHORS INDEX

- Wishart, J. 2 7
 Withner, C. L. 4 32
 Witt, A. W. 1 85
 Wittenberger, K., *see* Kürschner, K.
 Wittenkamp, R., *see* Wilde, S. A.
 Wittich, W. 1 30, 76, 4 14, 214, 5 232
 Wlassow, R. A. 4 239
 Wobst, A. 4 196
 Woelfle, M. 1 74, 127, 206, 3 241, 4 149
 Wohlfarth, E. 3 117
 Wokes, F., *see* Melville, R.
 Wolcott, G. N. 2 35, 146, 3 169, 5 189
 — and Martorell, L. F. 4 60
 Wolf, C. B. 1 139
 Wolf, F. A. 1 143, 2 192, 193
 — and Barbour, W. J. 3 75
 — and Davidson, R. W. 3 341
 — *see* Wolf, F. T.
 Wolf, F. T., and Wolf, F. A. 1 143
 Wolf, R. B. 2 226
 Wolf, W., *see* Sachsenberg, E.
 Wolfe, H. S., *see* Lynch, S. J.
 Wolfenbarger, D. O., and Buchanan, W. D. 1 243
 — and Jones, T. H. 5 204
 — *see* Mook, P. V.
 Wolff, M. 1 250, 3 321
 — and Jensch, O. 3 124
 Wollenweber, H. W. 5 21
 Wolfin, A. C., *see* Benson, A. O.
 Wolman, K. 5 123
 Wood, A. D., and Linn, T. G. 4 113
 Wood, D. M. 5 120
 Wood, O. M. 1 81, 254
 Woodruff, E. H., *see* Parrett, A. N.
 Woods, J. B., *see* Jewett, G. F.
 Woodson, R. E., and Schery, R. W. 4 96, 5 106
 Woodward, L., *see* Croft, A. R.
 Worley, C. L., and Grogan, R. G. 3 238
 —, Lesselbaum, H. R., and Matthews, T. M. 3 241
 Worschitz, F. 2 57
 Worthington, R. E. 2 56
 Woytkowski, F. L. 4 106
 Wright, B. S. 2 70
 Wright, E. 1 140, 2 119, 3 156, 249, 4 57, 248
 — and Slagg, C. M. 4 55 (2), 5 138, 276
 — *see* Davis, W. C.
 Wright, G. W. 1 98, 3 327
 — and Greenhill, W. L. 5 267
 Wright, H. L. 1 124, 3 193
 Wright, J. G. 2 243, 323, 3 337, 5 157, 209
 — and Beall, H. W. 2 72, 243
 — *see* Hewson, D. T.
 Wright, T. G. 4 149
 Wroughton, F. H. 2 306
 Wuoti, E. 3 173
 Wurth, K. 5 189
 Wüstendörfer 5 266
 Wyatt, F. A., Newton, J. G., and Ignatieff, V. 4 152
 Wygant, N. D. 4 131
 Wyk, J. H. van 1 57
 — and Loseby, P. J. A. 2 59
 — and Verwoerd, L. 1 47
 — *see* Cilliers, A. C.
 Wylie, K. H. 5 158
 Wylie, R. B. 5 166
 Wyman, D. 2 118
 Wynd, F. L. 4 19, 5 282
 Wyss, O. 4 237
 YABLOKOV A. S. 3 28, 4 91
 Yahres, G. van 4 58
 Yaichnikov, I. S., and Tarasikov, N. A. 3 198
 Yakimov, P. A., Federov, A. A., and Movchan, S. D. 3 67
 — *see* Pravdin, L. F.
 Yamane, M., *see* Shikata, M.
 Yankovitch, T. 2 260
 Yashiro, H. 3 55
 Yasuda, T., *see* Watanabe, M.
 Yates, F., *see* Fisher, R. A.
 Yatsenko-Khmelevsky, A. A. 1 173, 175, 2 218
 — and Bregadze, N. N. 2 47, 52
 — and Vasilevskaya, L. M. 2 143
 Yeates, J. S. 4 137
 Ylinen, A. 4 230, 5 36, 258
 Yoloresh, B. R. 1 177
 York, H. H. 2 20, 3 75, 4 124, 5 59
 — and Littlefield, E. W. 4 161
 Yorston, F. H. 2 51, 4 35, 175
 Youhotsky, M. J. 4 54, 188
 Young, A. E., and Freeman, R. D. 5 189
 Young, E. S. 5 43
 Young, F. D. 4 124
 Young, G. Y. 5 197
 — *see* Davis, W. C.
 — *see* Gravatt, A. R.
 Young, H. C. 2 159
 Young, H. E. 1 18, 2 186, 322, 4 150
 — *see* Schumacher, F. X.
 Young, L. J. 4 100
 Young, V. A. 2 165, 3 351
 —, Doll, G. B., Harris, G. A., and Blaisdell, J. P. 5 140
 Youngken, H. W., *see* Lacombe, N. R.
 Youorski, J., and Meyer, H. A. 5 145
 Yuill, J. S. 4 131, 253
 Yunker, T. G. 4 93
 Yurkevich, I. D. 3 29
 Yurre, N. A. 1 146
 ŽABKA, J. 2 27
 Zach, L. W. 3 131, 337
 —, Bauer, D., and Goodyear, H. 5 13
 Zachariw, B. J. 1 161, 2 210
 Zachystal, Z. 5 191
 Zakharov, N. G., *see* Banasevich, N. N.
 Zakharov, P. J. 4 152
 Zaky, Y. A. H., *see* Hilditch, T. P.
 Zand, S. J. 4 51, 5 134
 Zavitz, E. J. 1 73
 Zayarnyi, V. I. 4 113
 Zdorik, M. G. 2 164
 Zednik, F. 1 84
 Zeeuw, C. de 3 290
 Zehnen, H. von 1 184
 Zehngraft, P. J. 5 28
 — *see* Shirley, H. L.
 — *see* Gevorkiantz, S. R.
 Zeidler, R. S. 128
 Zentgraf, E. 1 92, 3 216, 4 185
 Zentmyer, G. A. 3 247, 4 57, 191, 5 200
 — and Horsfall, J. G. 4 188, 5 62
 Zerova, M. Ya. 2 19, 4 125
 Zetek, J., *see* Snyder, T. E.
 Zeyher 2 149
 Ziegler, 1 191
 Ziegler, E. A. 5 69
 Zielk, O. 5 285
 Zietzschmann, E., and Taesler, W. 3 156
 Zillig, H. 5 59
 Zimmer, O. 2 24
 Zimmer, W. J. 5 29, 110
 Zimmerle, H. 1 40, 299, 3 41, 130, 4 134, 5 143, 246
 Zimmerman, F. L., and Read, P. R. 2 180, 3 189
 Zimmerman, P. W., and Hitchcock, A. E. 1 261, 2 134, 135, 3 200, 4 216
 Zimmerman, W. I., *see* Tressler, C. J.
 Zirklin, D., *see* Evenari, M.
 Zlatnik, A. 1 24
 Zogg, H. 5 279
 Zohary, M. 5 100, 105, 162
 Zollikofer, C. 1 134
 Zollikofer, H. 4 44
 Zolotarev, E. Kh., *see* Goryachenkova, E. V.
 Zon, R. 4 137
 — and Duerr, W. A. 5 149
 Zorn, R. 4 181
 Zoroastrova, E. A. 3 221
 Zucker, M. 2 303
 — *see* Moore, C. G.
 Zvorykin, I. *see* Nevros, K.
 Zwart, W. 3 191, 4 262
 Zycha, H. 2 51, 4 36
 Zyodai, S., *see* Hachihama, Y.

SPECIES INDEX

- Abies*
 Asiatic spp. 4 95
 chemical composition of bark 4 15
 embryogeny 4 92
 hybrids 2 16, 3 109, 5 16, 95
 in Central America 1 149
 insect pests 3 256, 343 (2), 5 245
 natural regeneration 2 171
 rabbit damage 4 128
 root structure 3 133
 rosin 4 183
 seed storage 4 25
 vegetative propagation 4 16
 witches' brooms 3 74, 4 126
 wood
 anatomy 2 308
 durability 4 171
 gas 4 44, 241
 preservation 2 62
A. alba (*A. pectinata*)
 broadcast sowing 3 44, 4 102
 diseases 1 188-9, 2 145, 3 160, 246, 323
 distribution 1 85, 159, 4 94, 98 (2)
 ecological requirements 4 22
 fertilizer requirements 1 132
 in Denmark 5 174, 250
 in Département Hautes-Alpes 1 149-50
 in mixture 4 22, 100
 increment 1 299, 3 209, 4 63, 134, 5 27
 insects 4 129-30 (2), 5 64
 interception of rainfall 2 9
 management 1 149, 3 111, 119, 122 (2), for pulpwood production 2 33
 moisture requirements 3 297
 nutrient deficiency 3 158
 nutrient requirements 1 132
 provenance trials 3 109
 pruning 2 139
 regeneration, natural 1 159, 254, 3 297
 root growth 1 157
 seed size 1 89
 seed testing 1 87, 121
 selection forest 5 27
 succession 1 83, 253
 transpiration 3 106
 vitamin C from needles 5 51
 windthrow 3 240
 wood
 calorific value 2 49
 cleavage strength 4 232
 density 4 171
 durability 1 278, 3 222
 fireproofing 2 312
 grading rules 3 330
 properties 5 27, 35
 twisted growth 4 110
A. amabilis
 acclimatization in Russia 1 255
 diseases 2 19, 4 246
 distribution in Canada 5 168
 wood
 deterioration 5 116
 pulp 1 284
 uses 1 284, 3 152
Abies arizonica see *A. lasiocarpa* var. *a.*
Abies balsamea
 abnormality of twigs 4 189
 adventitious roots 5 17
 bark, chemical composition 3 23, fire resistance 3 160
 butt rot, influence of site factors 2 18
 calcium content of leaves 2 115
 cleaning 3 130, 4 28
 cutting cycle 4 28, 225 (2)
 diseases 2 192, 266, 3 246, 4 246, 248, 5 140
 distribution in Canada 5 168
 effect of Birch overstorey 4 228
 falling date and insect infestation 2 223
 general account 5 180
 girdling 4 105
 grading rules 2 240, 3 65
 growing season 1 5
 in Denmark 1 164, 5 250
 in Quebec 4 135
 in U.S.A. 3 129, 175, 5 18, 27
 in U.S.S.R. 3 67, 4 98
 increment 4 228
 and soil morphology 2 187, 293
 and wood density 2 142
 injury, logging 4 256
 insects 2 73, 91, 4 59, 129, 131, 5 62, 140, 200, 201, 284
 litter reduction 1 230
 pulpwood production costs 3 314
 regeneration 2 207, 4 24
 resin production 5 131
 root development and soil morphology 2 130, 293
 scaling 5 143
 seed storage 4 25
 seedling growth 5 165
 silviculture 1 32
 soil requirements 1 78
 water content 2 17
 wood
 blue stain 2 145, 5 189
 compression wood 3 13
 density and pulp quality 2 58
 deterioration in piled pulpwood 2 145
 drying 3 148
 groundwood pulp 5 118
 yield tables 3 351
A. bornmuelleriana 2 30
A. cephalonica 1 253, 4 248
A. chensiensis 4 95, 5 139
A. coahuilensis 5 169
A. concolor
 cork from bark 3 237
 cutworm damage to seedlings 2 196
 cytology 2 124
 diseases 1 140, 2 121, 4 248 (2)
 in Australia 2 263
 in Central America 1 149
 in Ukraine 4 98
 in U.S.A. 5 32
 insects 1 140, 2 22, 3 253
 tree height and merchantable length 2 161
Abies concolor—cont.
 wood
 durability 2 153
 preservation 3 143
 staining fungi 5 32
 uses, sizes and grades 4 169
Abies delavayi 5 58
A. firma 1 120, 4 248
A. fraseri 2 171, 209, 4 98
A. gamblei see *A. pindrow* var. *brevifolia*
A. georgei 4 95, 98, 5 139
A. grandis
 diseases 4 246
 distribution in Canada 5 168
 effects of grazing on reproduction 5 140
 girdling 5 78
 growth and form 5 174
 in Denmark 5 250
 In Idaho 5 158
 insects 2 73, 4 130, 5 65
 lignin esters, properties of 5 258
 wood
 pulp 1 98
 uses 4 237
 uses, sizes and grades 4 169
A. grandis f. *johnsoni* 4 158
A. guatemalensis 1 149
A. hickelii 1 149
A. holophylla 3 221, 4 95, 248
A. lasiocarpa 1 76, 3 237, 5 28, 168, 240
A. lasiocarpa var. *arizonica* 3 237
A. magnifica 4 219, 248
A. mariesii 1 255
A. mayriana see *A. sachalinensis*
A. nephrolepis 2 226, 3 67, 221
A. nobilis (*A. procera*)
 general account 4 105, 5 113
 nomenclature 3 205
 seed germination 2 295
 wood
 use in aircraft 4 173, 237, 5 115, 214
A. nordmanniana 2 52, 3 67, 4 98, 5 174, 250
A. pectinata see *A. alba*
A. pindrow
 hybridization 2 26
 regeneration, natural 1 209
 soils 1 128, 3 282
 thinning 2 299
 wood
 aircraft timbers 4 168
 dry battery cells 4 242
 preservative treatment 1 180
 pulp 5 44
 tests of quality 5 40
 wood flour 5 188
A. pindrow var. *brevifolia* (*A. gamblei*) 4 95
A. pinsapo 5 276
A. procera see *A. nobilis*
A. religiosa 1 149, 4 83, 5 21
A. sachalinensis 1 120, 152, 2 122, 190, 3 252, 4 131
 — var. *mayriana* 2 129
A. sibirica 3 67 (3), 4 98

SPECIES INDEX

Abies spectabilis 2 26, 4 95

A. tacanensis 2 290

A. veitchii 4 98

Abutilon indicum 5 29

Acacia

germination and seedlings 3 44

leaf anatomy 2 124

nomenclature 2 126

poisoning 4 228, 5 32, 79

source of tannin 3 237, 5 129

Acacia spp.

Australian (insect pests) 3 168

Kenya 2 199

Papuan 4 223

Tasmanian (charcoal) 5 50

A. acuminata 2 210

A. alba 4 158

A. albida 2 125, 4 184, 5 10

A. arabica (*A. nilotica*)

gum 5 52, 271

in Italian E. Africa 262

in Sind 4 83, 5 286

insects 1 251, 4 60

on floodland in India 3 306, 5 162

seed treatment 4 26

sowing methods 1 343, 5 111

wood

anatomy 1 93

charcoal 5 127

for wheelwrighting 5 9

improved 5 187

tannin extraction 5 272

treatment to prevent cracking
4 117

uses 5 54, 135

A. arabica var. *telia* 3 45

A. auricularis 5 193

A. auriculiformis 3 45, 4 227

A. bobaensis 1 125

A. barkeri 2 188

A. bussei 3 291

A. campylacantha 2 125

A. catechu

dyestuffs 4 121, 5 195

growth rings 1 171-2

increment 1 171

and provenance 2 263

insects 1 251

nurse species 1 209

reproduction 2 263

effect of grazing 2 92

effect of slash burning 3 213

seed collection 3 124

spacing 2 170, 241

A. confusa 1 141, 241, 2 236, 3 66,
249, 4 49

A. cyanophylla 2 91

A. cyclops 2 35, 3 150

A. dealbata 1 113, 209, 5 29, 41, 130,
239

A. decurrens

bark anatomy 5 239

drought resistance 5 197

insects 1 250 (2)

seeds, longevity 5 29

silviculture 4 224, 5 7

tanstuffs 3 153, 4 121, 5 130

unfavourable environment 5 196

volume tables 1 106

wood

pulp 1 314

Acacia decurrens var. *mollissima*
bark

anatomy 5 239

grading and sampling 4 193

fuel plantations in Uganda 2 279

in Cameroons 2 208

in Italian E. Africa 2 26

insects 2 329-9, 3 169, 343

pathology 1 19, 192

planting methods 4 163

regeneration, natural 2 89

seed treatment 3 44

silvicultural practice 2 235, 4 224

spacing 2 263

tannin 2 153, 237, 330, 4 130, 192

thinning 4 28

volume and yield tables 1 106 (2)

wood

analyses 3 150

ash content 2 318

description 5 259

mechanical strength 3 311

preservation 2 265, 3 146

pulp 2 308

seasoning 2 318

use underground 4 120

A. elata 3 44

A. farnesiana 4 216, 5 10, 29, 30,
244, 271

A. floribunda 2 254

A. gummifera 5 10

A. heterophylla 1 27

A. implexa 4 60

A. karroo 3 150

A. koa 5 62

A. laeta 2 237

A. lebbeck see *Albizzia l.*

A. leucophloea 3 44, 330, 4 56, 158

A. litakunensis (*A. spirocarpoides*) 4
123

A. longifolia 3 44, 254

A. macracantha 1 273

A. maideni 4 60

A. melanoxylon 1 209, 2 89, 3 44,
313, 5 181, 196

A. modesta 1 29, 3 306, 5 30

A. mollissima see *A. decurrens* var.
mollissima

A. nilotica see *A. arabica*

A. oraria 3 44

A. penninervis 1 48

A. planifrons 1 209, 2 170

A. pruinosa 3 44

A. pycnantha 2 210, 5 130

A. saligna 2 35, 3 150

A. senegal 3 291, 332

A. seyal 5 10

A. sieberiana 5 271

A. somalensis 3 291

A. sophorae 3 254

A. spirocarpa 1 33

A. spirocarpoides see *A. litakunensis*

A. sundra 2 170

A. tomentosa 3 44

A. tortilis 5 10

A. usumacintensis 5 173

A. villosa 3 44, 5 19

A. woodii 2 125

Acalypha spp. 5 24

Acalypha ponapensis 4 20

A. schreiteri 5 24

Acer:

diseases 2 192

hybrids 2 16, 3 109, 4 56, 57

identification 4 21

susceptibility to lightning strike
2 284, 5 274

Acer spp.

Burmese 3 292

Chinese 4 222

diseases 1 143, 2 77, 192, 3 162, 5
278

distribution 1 246

effect of shade on bark healing
5 286

hedge plants 5 112

injuries (deer) 5 140

insects 5 140

U.S. species 3 132

underplanting Pine 2 42

wood

durability in mines 3 312

identification of Indian spp. 5
181

A. argutum 5 197

A. campestre 1 121, 2 46, 49, 181,
4 30, 96

A. floridanum 5 19

A. glabrum 4 96, 5 11

A. hyrcanum 4 96

A. japonicum 4 222

A. laetum 1 246, 2 46

A. macrophyllum 1 240 (2), 251, 2
153, 201, 5 139, 278

A. monspessulanum 2 46, 4 96

A. negundo

diseases 2 18

drought resistance 1 269, 2 335

in N. Dakota 4 94

in S. Dakota 3 204

in Nebraska 4 157

in shelterbelts 1 269, 5 112

insects 3 254, 4 252, 253

mineral constituents 1 234

root system in steppe soils 3 112

seed treatment 2 36, 3 126

wood

anatomy 2 46

chemical composition 2 116

A. nigrum 3 349, 4 217, 5 23

A. obtusatum 4 96

A. palmatum 4 222

A. pennsylvanicum 2 247, 3 251,
341, 4 21, 5 174

A. platanoides

diseases 2 19

fat content 4 109

injury from

chemicals 4 54

salt spray 2 191

insects 4 254

litter decomposition 1 16

quebrachitol in leaves 5 259

seed production 1 34

seed treatment 2 36, 3 126

source of rubber 2 320

vegetative propagation 1 90

wind resistance 2 205

wood

anatomy 2 46

uses, conversion and treatment
4 30 (2)

SPECIES INDEX

Acer pseudoplatanus
decomposition of leaves 4 162
distribution 1 246
injury from
 frost 4 53
 salt spray 3 71, 4 245
 water rats 4 128
natural regeneration in Britain 5 109
potassium bichromate injection 4 233 (2)
quebrachitol in leaves 5 259
seed treatment 2 36
tropism and reaction wood 2 45
vitamin B in buds 3 199
water movement and growth 1 234
wood
 anatomy 2 46
 calorific value 2 49
 effect of chemicals 2 304
 plywood 2 148
 uses, conversion and treatment 4 30 (2)

A. rubrum
diseases 1 142, 240-1, 2 18, 326, 3 341, 4 246, 5 199, 243
effect of fire and cutting 3 211
growth substances 3 289
height increment, seasonal variation 3 209
hybrid with *A. saccharinum* 3 28
in Cyprus swamp 1 147
in Lake States 5 18
in New Hampshire 3 175
in N.W. Maine 5 27
in Pennsylvania 5 239
injury from
 deer 4 21
 frost 5 274
 rabbits 2 247
 wind 3 156
insects 3 347, 4 133
leaves

 chemical composition 2 115, 3 199, 284, 4 86
 palatability to millipedes 5 88
nutrition 1 251
photoperiodism 1 228
soil requirements 3 298
sprout control 2 338
thinning 3 87
transpiration 1 81
vegetative propagation 1 81, 237, 3 108, 4 217
volume table 1 298
wind resistance 2 205
wood

 calorific value reduced by decay 5 39
 durability 2 62, 3 62
 grading 5 185

A. saccharinum
afforestation of strip-mined land 3 215
diseases 5 199
drought resistance 2 292
foliage sampling 3 113
hybrid with *A. rubrum* 3 28
injury from
 rodents 4 59
 wind 2 205

Acer saccharinum—cont.

 insects 3 254
 seed treatment 2 36
 wood
 durability 3 62
 pulp 3 320

Acer saccharophorum = *A. saccharum*

A. saccharum
biometrical study 1 139
diseases 1 142, 143, 240, 2 119, 245, 326, 3 341, 4 246, 5 199, 278
effect of fires and cutting methods 3 211
fastigate varieties 4 103
fertilizers and seed production 1 18
forest soil 2 113
general account 3 132
hybrids with *A. nigrum* 4 217
in N.E. United States 3 175, 5 8, 18, 27, 31, 207, 239
increment 5 67
and rainfall 3 260
and soil morphology 2 187
in British Columbia 3 119
seasonal 3 209

injury from
 deer 4 21, 58
 glaze frost 2 284
 increment borings 2 123
 porcupine 3 164, 251
 salt spray 2 191

insects 2 195, 5 63
leaves
 calcium content 2 115
 mineral nutrient content 5 90
 palatability to millipedes 5 886
 variation 1 139
litter, mineral nutrient content 3 284
nomenclature 3 116
nutrition 1 251-2
phylogeny 1 139
root

 development 2 293
 distribution 4 92
sap
 analysis 3 154
 collection 5 (54)
 pH 2 238 (2)
 sugar content 3 68, 5 272
seed production 1 18
seed treatment 2 39
silviculture 2 264
site index 5 102
soil requirements 3 120
thinning 4 104
transpiration 1 81, 5 164
vegetative propagation 1 81, 260, 3 108
volume table 1 298, 2 162, 249, 330, 3 349 (3), 5 289
weeding 4 228
wind resistance 2 205
wood

 absorption capacity 1 175
 chemical composition 4 34
 destructive distillation 5 126
 durability 2 62, 3 62, 4 178
 effect of chemicals on 1 175

Acer saccharum—cont.

 wood
 ethanolysis 2 143, 5 183 (2)
 grading 5 185
 hydrolysis and hydrogenation 2 143, 5 183
 identification 4 105
 mineral stain 1 173
 preservative treatment 5 190
 pulp 2 57, 302, 3 60, 320 (2)
 resin impregnated plywood 5 262
 sapwood 4 230
 sawdust as fuel 3 156
 sawmilling 2 56
 seasoning 3 148, 4 180
 service tests for flooring 3 311
 uses 4 106

Acer spicatum 2 143, 192, 5 199
A. tataricum 2 36, 46, 3 157, 4 226
A. trautvetteri 2 46
A. tschonoskii 2 26
A. tutcheri 4 222
A. velutinum 2 46
Acerodendron madagascariense 2 109
Achras 5 21
A. chicle 3 222
A. dissecta 5 240
A. zapota 2 238, 5 10, 54
Ackama muelleri 3 329, 4 30
A. quadrivalvis 4 30
Acmena spp. 4 97
Acokanthera abyssinica 1 248
Acrocarpus fraxinifolius 4 26
Acrodiclidium spp. 4 158
Acronychia spp. 3 37
Actephila spp. 4 21, 231
Actinocheita 2 140
Actinodaphne spp. 1 50, 4 223
Adelia 5 24
Adenanthra spp. 4 223
A. microsperma 3 330
A. pavonina 2 199, 4 27
Adenium somalense 3 23
Adina spp. 1 27
A. cordifolia 2 91, 5 35
Aegiphila wigandoides 5 23
Aeschynomene 2 158
Aesculus spp. 2 16, 191, 205
A. californica 5 107
A. hippocastanum

 diseases 5 279
 effect of growth substances 1 134
 injury, salt spray 2 118
 insects 4 254
 leaves: boron content 3 23
 vitamin B 3 199
 litter decomposition 1 16
 potassium bichromate injection 4 233
 seeds

 aescigenin in 5 90, 234
 feeding value 5 194, 270
A. turbinata 3 120
Afrolicania elaeosperma 4 183
Afromosia spp. 2 264
A. angolensis 2 72
Azelia (Intsia) 1 172, 2 40
A. africana 1 135, 211, 5 147
A. amboinensis 3 308, 5 113, 130
A. bakeri 1 113, 209, 2 265

SPECIES INDEX

Afzelia bijuga 3 48, 4 35
A. pachyloba 1 151, 4 96
A. palembanica 2 89, 208, 263, 3 124, 193, 321
A. quanzensis 2 170, 226
A. zenkeri see *A. pachyloba*
Aganosma lacei 4 158
Agathis spp. 1 312, 2 66, 3 301, 4 50
A. alba see *A. dammara*
A. australis
 gum 3 331
 in California 4 221
 increment
 and yield 3 350
 early 3 289
 insects 2 91
 natural regeneration 3 300
 wood
 battery separators 5 269
 dye vats and chemical storage 4 233
A. beckingii 4 95
A. brownii see *A. robusta*
A. celebica 2 319
A. dammara (*A. alba*) 1 27, 271, 314, 2 308
A. enderti 4 95
A. hami 3 238, 4 95
A. latifolia 4 95
A. orientalis 4 221
A. palmerstoni 3 289
A. philippinensis 3 238
A. robusta (*A. brownii*) 2 263, 338, 3 289, 4 221, 5 269
A. vitiensis 3 154
Aglaia spp. 5 173
A. parksii 5 244
A. roxburghiana 4 26
Ailanthus spp. 4 40, 5 258
A. altissima (*A. glandulosa*) 1 235, 2 119, 3 112, 241, 4 103
A. excelsa 5 9
A. glandulosa see *A. altissima*
A. grandis 3 220, 231
Alangium chungii sp. nov. 5 240
A. lamarckii 4 27
Albizia spp. 1 210, 2 203, 3 292, 4 223, 5 113, 285
A. acle 1 36, 2 203
A. amara 1 209, 2 170, 5 127
A. coriaria 1 114, 4 109
A. falcata 4 98, 99
A. gummifera 2 170, 5 271
A. julibrissin 2 246, 3 162, 5 141, 278
A. kalkora 5 139, 278, 279
A. (Acacia) lebbek
 diseases 3 162, 5 139, 278, 279
 in Fiji 5 244
 increment 2 301
 insects 5 286
 plantations in Nigeria 3 299
 seed, longevity of 5 29
 tannin 5 192
A. lophantha 3 162, 5 139, 278, 229
A. odoratissima 5 29
A. thorelii 3 162, 5 279
A. zygia 4 109
Alchornea spp. 4 216, 5 24
A. cyclophylla 5 106
A. latifolia 5 19
Aleurites spp. 3 239, 5 12

Aleurites cordata 3 68
A. fordii
 bud dormancy 4 217
 cultivation 1 291, 2 66, 237
 diseases 2 237
 frost injury 4 245
 fruit 2 237, 4 244
 general account 2 126, 237
 growth habits 2 237
 in N. Zealand 2 155
 oil 2 66, 237 (2)
 root distribution 2 293
 seed germination 4 226
A. moluccana 2 237
A. montana 1 291
A. trisperma 1 38
Alexa spp. 4 21
Allophylus spp. 1 94
A. subluxus 5 244
A. umbrinus 5 244
Alnus 2 16, 3 109, 4 16, 5 93, 94
A. spp. 1 157, 2 12, 153, 4 19, 106, 174, 5 164
A. glutinosa
 cytology 4 16
 diseases 5 60
 fat content 4 109
 in Finland 2 182
 injury from
 frost 4 53
 glaze ice 3 70
 wind 4 186
 litter decomposition 3 21, 4 162, 5 171, 232
 mycorrhiza 3 194, 5 11
 nurse crop 2 328
 nutrition 1 86
 on sandy soils 2 295
 prehistory 5 8
 sand-dune reclamation 3 47, 5 89
 soil improvement 1 15, 160
 volume table 5 143
 wood
 calorific value 2 49
 clog soles 5 185
 plywood 2 148
 producer gas fuel 2 316
 properties 1 168
 yield 1 299
A. hirsuta 4 16
A. incana
 afforestation
 in Germany 4 167
 of shifting sands 5 254
 cytology 4 16
 diseases 5 60, 232
 fat content 4 109
 in India 1 209
 influence on herbaceous plants 2 197
 insects 2 22
 litter decomposition 4 162
 mycorrhiza 3 194
 nurse crop 1 164, 2 328
 on sandy soils 4 162
 soil improver 3 285, 5 12
 stand types in Russia 3 292
 wood
 charcoal manufacture 2 316
A. japonica 4 16
A. orientalis 4 16

Alnus rubra 1 212, 257, 2 192, 5 13, 139, 278
A. rugosa 3 97
A. sinuata 5 281
 × *Alnus spaethii* 4 16
A. subcordata 4 16
A. tenuifolia 4 16, 252
A. viridis 2 22
Alphitonia excelsa 4 236
Alstonia congenis 1 84, 3 131
A. longissima 5 107
A. macrophylla 1 114, 5 107
A. reineckiana 5 107
A. scholaris 2 90, 265 (2), 3 218, 4 36
Amanoa potamophila 5 169
 Amarantaceae 1 170
Amaranthus 3 115
Amburana 2 127
Amelanchier canadensis 2 247
A. nervosum 2 26
A. vulgaris 2 36-7
Amoora spp. 2 8, 5 113
A. nitidula 1 93
A. wallichii 5 181
Amorpha fruticosa 1 254
Amygdalus spp. 1 164
Amyris spp. 4 158, 5 19
 Anacardiaceae 1 271
Anacardium occidentale 2 173, 5 238
Andira spp. 5 19
A. inermis 1 297
Angophora spp. 5 19
Anisoptera glabra see *Scaphula glabra*
A. grossivenia 4 96
A. laevis 2 119
A. marginata 2 219
A. thurifera 3 135
Annona spp. 5 19
A. senegalensis 1 94
 Annonaceae 1 150, 3 294
Annonidium manii 3 256
Anodopetalum biglandulosum 2 172
Anogeissus 4 231, 5 181
A. acuminata 1 112, 113, 314, 3 220, 4 114
A. latifolia 2 59, 264, 5 78, 127, 177
A. pendula 1 275, 3 220
A. schimperi 4 153, 5 20
Anopyxis sp. 3 256
Anthobembix spp. 3 116
Anthocephalus sp. 1 314
A. cadamba 2 308, 3 42, 4 40, 5 187
Anthodiscus mazarunensis 4 222
Antiaris africana 2 203, 3 131
Aphanomyxis spp. 5 173
 Apocynaceae 4 158
Aporosa spp. 4 231
Apuleia spp. 4 106
Aquilaria cumingiana var. *parviflora* 2 290
Aquilegia canadensis 5 281
 Araliaceae 1 151, 3 115, 5 172
Araucaria spp. 5 271
A. angustifolia (*A. brasiliana*)
 cytology 2 141
 general account 2 218, 5 243, 256
 in Argentina 4 106, 161, 5 248
 microsporogenesis 4 15
 wood
 properties 1 274, 4 33

SPECIES INDEX

Araucaria angustifolia (*A. brasiliana*)
—cont.
wood
pulp 4 265
uses 5 5
A. araucana (*A. imbricata*) 3 101,
261, 293, 4 106, 265, 5 58
A. bidwillii 1 155, 3 24, 152, 308, 329
A. brasiliana see *A. angustifolia*
A. cunninghamii
branch development 3 289
chlorosis 2 91, 3 71
frost resistance 2 204
in Queensland 4 219, 5 18, 19
mycorrhiza 2 186
seed storage 2 338
spacing 2 338
wood
aircraft construction 3 135, 329
anatomy 3 308
compression wood 4 230
identification 3 308
plywood 1 283, 4 236
preservation 2 90
sawdust 4 52
uses 3 152, 5 40, 269
A. excelsa 1 112, 4 154
A. imbricata see *A. araucana*
Araucarioxylon decaryi 2 110
Arbutus spp. 2 16, 153
A. menziesii 2 186, 4 168, 5 139, 278
Archidendron 4 223
Archytaea vahlii 2 129, 265
Arctostaphylos pungens 4 182
Ardisia spp. nov. 4 96 (2), 158, 5 169,
173
Areca catechu 4 121
Argania spinosa 5 10
Aromadendron spp. 4 231
Artocarpus 3 115
A. spp. 4 231, 5 19, 113
A. altilis comb. nov. 3 115
A. chaplasha 1 208, 2 8
A. cumingianus 4 35
A. hirsutus 1 209, 2 170
A. integer (*A. integrifolius*) 2 170,
237, 265, 5 238
A. integrifolius see *A. integer*
A. lanceaefolius 3 321
Arundinaria alpina 1 248
Asimina triloba 5 55
Aspidosperma spp. 1 93, 4 106
A. megalocarpon 3 222
A. polyneuron 1 271, 4 33, 5 38, 256
Aspidosperma quebracho 2 264, 3 327
Asteroxylon mackiei 5 98
Astromidium spp. 5 244
Astromium spp. 4 106
Atalantia 4 231
A. monophylla 2 199
Atherosperma moschatum 2 44, 172
Athrotaxis 5 98
A. cupressoides 5 58
A. laxifolia 5 58
A. selaginoides 3 48, 329, 5 181, 269
Atriplex halimus 4 229
A. lentiformis 4 229
Aucoumea klaineana 4 105
Austrotaxis spicata 3 29
Autranella congolensis 1 94
Avicennia 4 17

Avicennia alba 2 115
A. marina 1 271
A. nitida 2 125, 3 294, 5 193
A. officinalis 1 283, 3 30
Avicenniaceae 4 157, 5 105
Azadirachta indica (*Melia azadi-
rachta*)
coppice mortality 2 170
grazing 2 92
in Deccan 5 9
in Nigeria 1 113
insects 5 286
natural regeneration 1 113
nursery practice 2 170
oil 5 132
seed treatment 1 88, 2 170, 263,
3 44
stump planting 2 40
suppressing weed growth 1 103
swamp draining 2 89
Azalea indica 4 154
Backhousia anisata 3 294
B. citriodora 4 50
Baikiaea plurijuga 1 226, 2 125, 170
B. robynsonii 1 247
B. suzannae 1 247
Baileyoxydon lanceolatum 3 37
Balanites aegyptiaca 2 199, 4 243,
5 10, 178
B. roxburghii 5 194
Balanocarpus cagayanensis 3 135
B. heimii 1 159, 2 89, 90, 208
Balnea stormae 4 158, 5 23
Balsamodendron mukul 5 131
Bambusa ventricosa 5 24
Bambusa 1 46
Barringtonia spp. 2 27
B. acutangula 4 216
B. longipedicellata 1 249
B. petiolata 5 244
B. racemosa 4 243
Barringtoniaceae 2 126
Bartholomaea mollis 3 36
B. sessiliflora 3 36
Barylum 4 159
Basisperma sp. 4 20
Bassia see *Madhuca*
Bauhinia spp. 4 158, 223, 5 19
B. acuminata 5 96
B. forficata var. *candicans* 4 89
B. lyrata 4 96
B. purpurea 1 209, 5 96
B. reticulata 1 94
B. variegata 2 263, 4 89
Bedfordia salicina 4 46
Beilschmiedia spp. 2 140, 4 223
B. bancroftii 4 230
B. berteriana 5 22
B. sikkimensis 1 257
B. tawa 3 235, 307, 5 185
Bellicolum spp. 4 223
Benzoin aestivale 3 163
Bernardia 5 24, spp. nov. 5 173
Betula
breeding 3 110
hybridization 2 16, 3 109, 4 16,
217, 5 15, 16, 93, 94, 236
immune to lightning damage 1 127
Betula spp.
deer browsing 4 21

Betula spp.—cont.
diseases 3 77, 5 278
Far Eastern 5 172
hedge plant 5 112
insects 4 133, 253
mineral constituents 1 234
prehistory 5 8
sowing season 4 26
wood
absorption of resin 5 120
compreg 5 262 (2)
pitch 3 155
plywood 5 120 (2), 263 (3)
pulp 1 284–5, 2 57, 3 60 (2)
sleepers 4 178
Betula alaskana 1 247
B. alba s.l.
afforestation of sandy soils 2 295,
5 254
breeding 5 165
diseases 1 241, 5 199
fat content 4 109
felling systems 5 208
fertilizer and mycorrhiza forma-
tion 5 11
germination and growth 5 253
glaze damage 3 70, 4 53
influence of sea wind on growth
4 186
interception of precipitation 5 232
leaves
decomposition 1 76, 4 162, 5 232
nitrogen content 3 285
litter, amount of 5 162
management 1 155, 226
moisture requirements 3 297
nurse crop for Pine 2 328
nursery technique 5 178
planting methods 5 178
pollen viability 5 164
root growth 1 157
root system 4 162
salt-storm damage 4 253
shelterbelts 2 43
silviculture 2 30, 3 118, 207 (2), 296
soil improver 5 12
twigs as fodder 4 184
underplanting Pine 2 42
vegetative propagation 1 155, 3 26,
5 15
volume determination 4 62, 5 66
wood
calorific value 2 49
charcoal 2 316, 4 47, 5 30
chemical composition 3 53
floating 4 109
hardness 2 50
impregnation with sugar 3 63
improved wood 2 307
knots 2 47
plywood 1 287, 2 148, 4 38
prehistoric distribution 2 181,
3 15, 4 82
pulp 5 56
reaction to alkali 4 35
sawmilling 2 56
strength 1 275, 4 108, 5 183
yield of gas 4 44, 241
Betula alba 1 275, 2 309, 4 233, 5 34
— var. *papyrifera* 2 17
— var. *pendula laciniata* 2 17

SPECIES INDEX

- Betula albo-sinensis* 4 98, 5 139
B. celtiberica sp. nov. 3 37
B. fontinalis (*B. occidentalis*) 1 76, 3 119, 251, 4 252
B. glandulosa 5 18
B. japonica 2 122, 5 175
B. khirgizorum 2 129
B. kwangsiensis sp. nov. 4 222
B. lenta 2 155, 3 211, 284
B. lutea
 calcium content of leaves 2 115
 diseases 2 145, 326, 3 162 (2)
 distribution
 in Canada 5 168
 in U.S.A. 2 85, 3 175, 5 18, 27
 effect of fires and cutting 3 211
 forest soil 2 113
 grouse food 5 174
 growth and soil morphology 2 187, 293
 increment-boring damage 2 123
 insects 2 248, 4 254, 5 62, 140, 203
 palatability of leaves to millipedes 5 88
 porcupine damage 3 164
 silviculture 2 264
 soil requirements 3 120
 thinning 2 216
 under Fir and Spruce 4 228
 volume and value tables 5 289
 wood
 chemical composition 4 34
 grading of logs 5 185
 identification 4 105
 plywood 4 174
 pulp 3 320 (2)
 sawdust as fuel 3 156
 service tests 3 311
 uses 4 106
B. maximowiczii 5 175
B. nigra 1 298, 2 62
B. occidentalis see *B. fontinalis*
B. papyrifera
 amylase system of sap 4 154
 deer browsing 5 174
 diseases 2 326, 3 76
 distribution
 in Canada 4 135, 168
 in U.S.A. 3 175, 4 94
 fibres 5 55
 height growth, seasonal course of 3 209
 hurricane damage 3 156
 increment-boring damage 2 123
 insects 2 248, 4 254, 5 63
 on cut-over land 5 27
 palatability of leaves to millipedes 5 88
 pioneer on well drained gravels 4 19
 porcupine damage 3 164, 251
 sowing 2 339
 thinning 2 216
 use in afforestation 5 31
 vegetative propagation 1 81
 wood
 chemical composition 4 34
 loss of calorific value through decay 5 39
 pulp 3 320 (2), 5 44, 122, 123
Betula populifolia
 distribution in Canada 5 168
 food reserves 2 17
 girdling experiments 5 78
 height growth, seasonal course of 3 209
 insects 2 248, 5 62
 palatability of leaves to millipedes 5 88
 sprout control 2 215, 338
 vegetative propagation 1 81
 water content of trees 2 17
B. pubescens
 breeding 3 110
 chromosome number 1 237
 colchicine treatment of seed 3 27
 coppice shoots 5 235
 growth substances 2 283
 hybridization 1 22, 237
 soil requirements 5 175
 vegetative propagation 5 14
 wood
 rayon pulp 2 150
B. schmidtii 1 259
B. verrucosa
 breeding 3 110
 chromosome number 1 237
 colchicine treatment of seed 3 27
 coppice shoots 5 235
 'Curly Birch' 2 53, 128
 hybridization 1 22, 237
 mycorrhiza tests 5 11
 rayon pulp 2 150
 seed production 1 34
 vegetative propagation 5 14
 water régime 2 31
 Betulaceae 5 11
Bignonia capensis 1 260
B. megapotamica 4 15
 Bignoniaceae 2 218
Billia spp. 1 169
Bischofia spp. 4 231
Blakea brunea sp. nov. 4 96
Blumea balsamifera 2 158
 Bombacaceae 1 169
Bombacopsis fendleri 4 83
Bombax 5 243
Bombax spp. 4 40
B. buonopozense 3 131
B. insignis 3 63
B. malabaricum
 general account 3 116, 4 159
 growth rings 1 171
 in Chittagong 2 8
 kapok 5 55
 leaf anatomy 5 238
 regeneration from suckers 1 38
 stump planting 2 263 (2)
 vegetative propagation 2 296, 5 235
 wood
 gum 5 271
 improved wood 5 186
 preservative treatment 3 231
 seasoning 1 100, 2 265, 4 43, 5 190
 uses 3 329, 4 242
 Boraginaceae 3 219
Borassus flabellifer 1 6
Boronia megastigma 5 271
Boscia (*Capparis*) *albitrunca* 4 123
Boscia salicifolia 1 94
Bosqueia angolensis 5 51
Boswellia carteri 3 155
B. dalzielii 4 197
B. frereana 3 155
B. serrata 2 92, 3 328, 5 203
Botryopteris cylindrica 5 98
Bowdichia 5 113
Brachystegia 1 290, 2 170, 171, 173, 201, 4 230
Brachenridgea zanguebarica 1 94
Brassiantha pentamera 4 21
Brassiodendron gen. nov. 4 97, 223
Bridelia 4 231
B. palauensis 1 249
B. retusa 5 238
Broussonetia papyrifera 2 263, 4 41, 5 44
Bruguiera spp. 3 330, 4 17
B. conjugata 5 193
B. cylindrica 5 193
B. eriopetala 2 201
B. gymnorhiza 1 281, 2 201
B. hainessii 2 201
B. parviflora 5 193
B. sexangula 5 193
Brunellia spp. 5 102
Brya ebenus 5 240
Bubbia spp. 4 223
Buchanania spp. 4 20, 231
B. latifolia 4 122
Buchenavia capitata 3 137
Bulnesia spp. 4 106
B. arborea 4 232, 5 180
Bumelia lesueurii sp. nov. 3 36
B. tabascensis 5 173
Bunchosia spp. 4 158
Burkea africana 1 226, 2 264
Bursaria spinosa 5 234
Bursera australasica 4 243
B. simaruba 4 60, 5 19, 189
 Burseraceae 4 31
Butea monosperma (*B. frondosa*) 5 238
Butyrospermum parkii 1 113, 4 122, 197
Buxus sempervirens 1 262, 2 200, 3 303, 5 258
Byrsonima crassifolia 5 10
B. incarnata 5 106
B. spicata 3 137
Cabralea spp. 4 106
Caesalpinia spp. 4 106, 121
C. bonducella 5 96
C. coriaria 5 269
C. digyna 5 29
C. echinata 3 239
C. spinosa 4 121
Calamus spp. 2 8
C. maximus 2 66
C. ornatus 2 66
C. siphonospathus 4 51
Calatola 4 222
Calliandra calothyrsus 3 297
C. tetragona 3 297
Callicarpa spp. 4 96, 231
Callitris spp. 1 251, 4 131
C. calcarata 2 308
C. glauca 1 94, 2 89, 3 139, 5 110
Callitropsis araucarioides 5 271

SPECIES INDEX

- Calonyction bonanox* 4 89
Calophyllum spp. 3 48, 222, 4 20, 231, 5 113
C. antillanum 2 35, 5 240
C. brasiliense 5 113, var. *rekoi* 3 65
C. burmanni 1 314
C. calaba 5 10
C. inophyllum 1 88, 3 162, 308, 4 121, 5 113
C. lucidum 3 137
C. polyanthum 2 8
C. tacamahaca 2 339
Calotropis gigantea 5 28
Calycophyllum spp. 4 106
C. spruceanum 5 113
Calyptanthus spp. 4 158, 5 19
C. cuneifolia 5 169
Camellia spp. 3 292
C. japonica 5 167
Campanulaceae 5 23
Campnosperma spp. 4 20, 231
C. auriculata 1 114
C. zeylanicum 1 114, 2 264
Campostemon philippinensis 4 17
Cananga spp. 4 231
Canarium spp. 3 280, 4 231
C. euphyllum 4 168
C. moluccanum 3 305, 5 113
C. ovatum 3 127
C. schweinfurthii 1 46
C. zeylanicum 1 114, 2 66
Canthium giordanii 2 126
Capparis albitrunca see *Boscia* a.
C. bhamoensis sp. nov. 4 96
C. salicifolia see *Boscia* s.
C. yucatanensis sp. nov. 4 159
Caragana arborescens 2 13, 21, 214, 3 112, 4 25, 5 197
Carapa spp. 3 280, 4 17
C. grandiflora 1 84
C. guianensis 1 113, 3 127, 5 113, 216
C. moluccensis 1 93
C. simplicior 5 106
Cardwellia sublimis 2 172
Careya arborea 2 199
Cariniana micrantha 5 113
Carpinus betulus
chromosome number 4 91
litter decomposition 1 16, 76, 3 21, 4 162
prehistoric distribution 3 15
thinning 4 167
wood
calorific value 2 49
chemical composition 5 258
cleavage strength 4 232
unsuitable for plywood 3 228
C. caroliniana 1 152
C. carpinizza 4 91
C. tshonoshoii 4 91
Carpodinus spp. 5 133, 195, 272
C. hirsutus 5 272
Carpotroche spp. 3 116, 4 183
C. bahiensis sp. nov. 3 116
Carya 2 16, 4 11, 5 8, 172
Carya (*Hicoria*) spp.
boron content 4 88
diseases 1 143, 5 278
epicormic branching 2 171
girdling experiments 5 78, 112
insects 3 347, 4 132, 194, 5 108
Carya spp.—cont.
management 2 85
oil-spray injury 2 247, 5 136
volume tables 2 162
wood
characters and properties 1 93
compression 3 317
defects 2 53
durability 2 62, 3 62
spring manufacture 4 242
uses 2 65
Carya alba see *C. ovata* and *C. tomentosa*
C. cordiformis [284
calcium content of leaves 2 115, 3
insects 3 346, 4 191
prehistoric range 5 9
rainfall and increment 3 260
seed germination 4 101, 5 29
use in afforestation 5 31
volume tables 3 349
C. glabra 3 346, 349, 4 230
C. illinoensis see *C. pecan*
C. laciniata 4 230
C. ovata
calcium content of leaves 2 115
insects 2 159, 3 346
leaf character 5 98
nomenclature 4 230
prehistory 3 97
seed germination 4 101, 5 29
use in afforestation 5 31
volume tables 3 349
C. pecan (*C. illinoensis*) 4 20, 5 189
C. tomentosa 2 115, 3 346, 4 230
Caryocar krukovi sp. nov. 4 222
C. nuciferum 1 144
C. villosum 5 113
Casearia spp. 4 158
Cashalia 1 169
Casimirella 4 222
Cassia spp. 4 231, 5 19
C. auriculata 1 209 (2), 170, 4 26, 5 9
C. fistula 1 209, 251, 3 330, 4 26, 5 29
C. glauca 5 96
C. marginata 1 209, 4 26, 5 96
C. obtusifolia 5 96
C. siamea
artificial regeneration 1 113 (2), 161, 209
chromosome number 5 96
fuelwood plantations
Gold Coast 2 90
Madras 2 170
Nigeria 2 299 (2), 4 24
Uganda 2 279
general account 1 161
host for *Santalum album* 5 28
insects 2 22, 265
planting seepage areas 5 178
ridge sowing 5 253
silviculture 2 338
spacing and yield 2 89
stump planting 2 40
vegetative propagation 2 338
C. tora 1 5
Cassya 4 97, 223
Castanea, hybrids 2 16, 3 77, 5 16
Castanea spp.
climax in Kentucky 2 126
Castanea spp.—cont.
inoculation with *Cronartium* 1 239
insects 3 83 (2), 4 133
wood
durability 3 62, 4 171
restriction of imports into S. Rhodesia 5 275
Castanea argentea 5 130
C. ashei 5 193
C. crenata 1 188, 3 76, 199, 5 61, 140
C. dentata
diseases 5 137, 243
disease resistance 5 16
hybridization 4 16, 5 61
tannin content 5 130
volume table 1 298
wood
durability 1 181, 2 62
poles 5 192
uses of killed timber 4 30
C. mollissima 2 19, 5 130
C. sativa (*C. vesca*, *C. vulgaris*)
breeding 3 77
composition of nuts 5 234
diseases 1 188, 4 191 (3), 5 250
ecology 4 18
in Denmark 5 250
in Lombardy 1 146
insects 1 243
leaves, charcoal from 3 235
litter decomposition 1 76, 3 21
male sterility 3 199
susceptibility to lightning damage 1 127
wood
calorific value 2 49
cleavage strength 4 232
preservative treatment 2 62
shakes 1 172
C. vesca see *C. sativa*
C. vulgaris see *C. sativa*
Castanopsis spp. 1 239, 3 291, 294, 5 22
C. cuspidata 3 76
Castanospermum 5 18
Castalaria brittonii see *Henoonia angustifolia*
Castilloa elastica 5 1–4, 168, 272
Casuarina spp. 4 101, 5 40, 50
C. cunninghamiana 2 90, 5 19, 109
C. decaisneana 3 116
C. equisetifolia
artificial regeneration 1 113
insects 2 91, 3 169
on coastal sands 4 27
source of tannin 5 192
vegetative propagation 3 214
windbreaks 2 91
wood
charcoal 5 127
mechanical strength 3 220
mining timbers 4 27
C. junghuhniana 1 126
C. stricta 4 88, 5 196
C. tenuissima 4 229
C. torulosa 5 19
Catalpa spp. 2 16, 3 298
C. bignonioides 4 249
C. ovata 3 112
C. speciosa
deficiency symptoms 3 241

SPECIES INDEX

- Catalpa speciosa*—cont.
 disease resistance 5 279
 germination tests 4 25, 101, 5 29
 phyllotaxy 5 22
 rabbit damage 2 247
 root pruning 2 212
 root systems 3 112
 tolerant of high temperatures 2 292
 wood durability 2 222, 4 171
- Catha edulis* 2 119
- Cavanillesia platanifolia* 5 216
- Cavendishia* 5 102
- Cedrela* spp. 4 83, 97, 101, 106, 5 21, 257
- C. brasiliensis* see *C. fissilis*
- C. fissilis* (*C. brasiliensis*) 4 88
- C. mexicana*
 diseases 2 19
 in British Honduras 5 10
 in Guatemala 4 83
 insects 3 251
 phenology 3 208
 seed storage 1 35, 5 110
 silviculture 2 264, 4 158
- C. odorata* 2 112, 3 128, 5 41, 113, 142, 271
- C. toona*
 artificial regeneration 3 212
 growth-ring formation 2 301
 in Chittagong 2 8
 nursery practice 2 170, 263
 on swampy sites 5 178
 shade and seedling mortality 3 215
 stump planting 2 263
 underplanting Teak 4 28
 wood
 seasoning 2 59, 5 190
- C. toona* var. *australis* 1 93, 2 218, 3 297
- Cedrus* 2 221, 3 28, 4 171
- C. atlantica* 1 39, 226, 2 208, 5 109, 165
- C. brevifolia* 5 58
- C. deodara*
 anatomy 5 166
 artificial regeneration 1 5, 313, 2 90
 disease 1 115
 fire resistance 2 196
 forests in N.W. India 1 124
 frost damage 5 58
 general description 5 113
 in U.S.S.R. 2 208
 insects 5 202
 natural regeneration 1 113, 2 338
 soil profiles 1 128, 3 282
 thinning 2 299
 unfavourable environment 5 196
 wood
 air seasoning 2 59
 preservative treatment 1 180
 strength properties 2 90
- C. libani* 2 196
- Ceiba* sp. 5 19
- C. pentandra*
 cleaning of fibres 5 134
 general description 4 51, 5 134 (2)
 in Nigeria 5 20
 insects 5 203
 nursery technique 2 239
- Ceiba pentandra*—cont.
 vegetative propagation 3 289
 wood
 properties 1 94, 168
 substitute for softwoods 3 131
- Celtis* spp. 2 328, 3 116, 5 30
- C. caucasica* 5 258
- C. crenata* 3 220
- C. harperi* 5 244
- C. laevigata* 4 32, 5 44, 122, 123
- C. laevigata* var. *reticulata* 5 106
- C. mississippiensis* see *C. laevigata*
- C. occidentalis*
 cold storage of nursery stock 3 44
 damage by
 creepers 4 55
 rabbits 2 247
 rodents 4 59
 drought resistance 2 292, 3 335
 effect of shade on bark 5 286
 germination tests 4 25
 in N. Dakota 4 94
 in S. Dakota 3 204
 insects 4 132
 root pruning 2 212
 root systems 3 112
 wood
 anatomy 4 32
 preservative treatment 5 189
- C. petenensis* sp. nov. 4 159
- C. philippinensis* 3 220
- C. rhamnifolia* 2 90
- C. sellowiana* 4 32
- C. sinensis* 3 220, 5 197
- Celtis soyauxii* 2 307, 4 109
- C. spinosa* 2 200, 4 32
- C. tetrandra* 2 263, 3 220
- C. triflora* 4 32
- C. vitiensis* sp. nov. 5 244
- C. zenkeri* 4 109
- Centrolobium paraense* 3 175
- Ceratonia siliqua* 2 239, 5 167
- Ceratopetalum apetalum* 3 329, 4 243, 5 40
- Cerbera odollam* 5 271
- Cercis canadensis*
 diseases 2 192, 3 162, 163 (2) 5 279
 in Oklahoma 4 223
 insects 3 346, 348
 oil-spray damage 5 136
 varieties and forms 4 158
- C. occidentalis* 4 158
- Cercocarpus ledifolius* 4 224
- C. montanus* 2 69, 5 11
- Ceriops* 4 17
- C. candolleana* 1 30, 283, 3 330
- C. roxburghiana* 5 193
- C. tagal* 5 193
- Ceropegia borii* sp. nov. 4 96
- Chamaecyparis* 5 95
- C. (Cupressus) lawsoniana*
 diseases 2 42, 119, 193, 4 126, 190
 growth substances 5 13
 in N. Zealand 1 33
 in Oregon 5 20
 in U.S.S.R. 1 208, 255, 4 98
 mycorrhizal association 4 14
 seed germination 2 295
 staining fungus 4 189
 wood
 aircraft construction 5 115, 214
- Chamaecyparis (Cupressus) nootkatensis* 1 172, 3 109, 193, 4 95, 5 115
- C. obtusa* 2 149, 3 311, 4 126, 190
- C. pisifera* 4 98, 126
- C. (Cupressus) thuyoides* 1 147, 2 85, 250, 288, 3 203, 5 20
- Cheilosia* sp. 4 223
- Chenopodiaceae 1 170
- Chikrassia tabularis* 5 113
- C. velutina* 2 265
- Chilopsis linearis* 3 129
- Chimarrhis cymosa* 4 157
- Chiococca* spp. 4 158
- Chisocheton* spp. 5 173
- C. rhytidocalyx* 2 290
- Chloranthus* 4 222
- Chlorophora excelsa*
 artificial regeneration 1 113, 2 89
 diseases 3 53
 general account 1 84, 150
 in the Cameroons 3 280
 in Nyasaland 1 254
 natural regeneration 1 113, 2 279, 3 332, 5 105
 plantations in Uganda 2 171, 4 159
 silviculture 5 7, 20
 stump planting 2 40, 3 44, 5 178
 wood
 barrels 5 186
 durability 1 114, 4 109
 pulp 1 46
 strength properties 1 94, 150, 168, 3 307
 toxic properties 3 263, 4 216
- C. tinctoria* 2 112
- Chloroxylon swietenia* 1 313, 2 265, 4 27, 5 9, 127
- Chloretum glomeratum* 4 92
- Chorisia insignis* 4 89
- C. speciosa* 4 89
- Chrysobalanus ellipticus* 3 352
- Chrysophyllum* spp. 5 19
- C. panamense* var. *macrophyllum* 3 36
- C. roxburghii* 2 264
- Chrysanthamnus nauseosus* 5 132, 133
- Cinchona* spp.
 chemical constituents 3 154
 cultivation 2 4, 31, 155
 damping off 3 341
 ecology 2 4
 in British Empire 1 84
 in Cameroons 2 208
 in Ecuador 5 10
 insects 2 195
 world industry 1 101
- C. ledgeriana* 2 136
- C. succirubra* 2 4, 136
- Cinnamomum* spp. 2 140, 4 223, 231, 5 131 (2)
- C. camphora* 1 50, 3 171, 238
- C. cassia* 5 132
- C. zeylanicum* 2 199
- Cissus antihactica* 4 126
- Cistanthera papaverifera* 1 211, 5 186
- Citronella* spp. 2 290, 4 222
- Claoxylon* 5 98
- Claoxylon* spp. 4 223
- Clarisia mollis* 5 106

SPECIES INDEX

- Clathrotropis brachypetala* 3 137
Clausena abyssinica 2 26
Clavija allenii sp. nov. 4 96
Cleidion prelatum 5 106
C. sessile 1 249
Cleistanthus collinus 3 216, 4 21
Cleistopholis patens 3 131
Clepsydrops antiqua 5 98
Clethra spp. 4 158, spp. nov. 3 36
C. occidentalis 5 19
Cleyera spp. 4 21
C. theoides 5 19
Clitandra spp. 5 133, 195, 272
C. orientalis 4 122, 5 132
Clusia massoniana sp. nov. 5 173
Cnidocolus marceravii 5 132
Coccoloba (Coccolobis) spp. 3 169, 4 158
C. grandifolia 2 22
C. laurifolia 5 192
C. unifera 5 192
Coccolobis see *Coccoloba*
Cocculus laurifolia 4 125
Cochlospermum gossypinum 2 90, 5 271
Cocos sp. 5 19
Codiocarpus gen. nov. 5 243
Coelodepas sp. 4 21
Coffea sp. 5 19
C. arabica 4 88
Cola acuminata 5 203
C. cordifolia 5 20
Colubrina spp. 3 116
C. mollis 5 23
C. papuana 5 244
Combretaceae 1 151
Combretum apiculatum 4 123
C. binderanum 4 109
C. grandiflorum 2 141
C. guenzii 4 109
C. splendens 1 94
Combretodendron africanum 5 187
Commersonia spp. 4 231
Commiphora cuspidata 3 291
C. fisheri 1 33
Comocladia spp. 4 19
Coniferae 2 24
Connaraceae 3 294
Conarus allenii sp. nov. 4 96
Conocarpus erectus 2 125, 5 192, 269
Conostegia chiriquiensis sp. nov. 4 96
Copaifera sp. 4 83
C. coleosperma 1 226
C. mopane 1 227, 4 123
Coprosma grandifolia 2 127
Cordia spp. 2 127, 3 280
C. abyssinica 1 248
C. alliodora 1 210, 4 83
C. belizensis sp. nov. 5 169
C. gerascanthus 5 240
C. goeldiana 5 113
C. lockhartii 3 323
C. mhaya sp. nov. 2 201
C. micronesia 1 249
C. sulcata 3 137
Coriandrum sativa 5 271
Cornaceae 4 96
Cornus spp. 2 16, 206, 4 96
C. alba 2 36
C. florida 2 44, 4 21, 5 281
C. mas 5 258
Cornus nuttalli 1 262, 5 139, 278
C. rugosa 4 21
C. sanguinea 2 36, 3 112
Corylus spp. 2 188, 3 109, 4 133
C. avellana
 effect of growth substances 1 134
 hybridization 4 91
 insects 2 22
 nutritional value of nuts 5 130
 pollen viability 5 164
 prehistoric charcoal 2 181
 seed treatment 2 36
 water régime 2 31
C. californica 5 139, 278
C. maxima 5 130
Cotinus 2 140
Cotoneaster spp. 5 112
Cotylelobium spp. 2 265, 5 130
Coula edulis 1 169
Coumarouna 2 27
C. odorata 5 113
Couthovia spp. 4 223
Crataegus spp. 2 16, 181, 3 109, 4 21, 5 112
C. azarolus 2 201
C. coccinea 4 25
Crataegus monogyna 3 157
C. oxyacantha 2 36, 5 278
Crataeva glauca sp. nov. 4 159
Croton spp. 3 206, 4 21, 97, 159, 223, 231
C. aristophlebius 5 106
C. cascarilla 5 158
C. eluteria 4 158
C. ripense 4 20
Crudia spp. nov. 3 36, 4 223
Cryptocarya spp. 2 140, 4 97, 223
C. erythroxylon 4 243
Cryptomeria japonica
 in Denmark 5 174
 in Jamaica 1 112
 in N. Zealand 2 264
 soil conservation 1 292
 wood
 lignin content 4 109
 pulp 2 149, 308
 substitute for cork 4 121
C. japonica var. *elegans* 2 136
C. viridis 2 136
Cryptostegia grandiflora 5 53, 133, 177, 179, 272
Culcitium spp. 5 102
Cunninghamia lanceolata 2 308, 3 28, 300, 4 17, 156, 248
Cunonia capensis 1 37
Cupanea glabra 5 19
Cupaniopsis spp. 2 291
Cupressaceae 2 66, 5 199
Cupressocyparis leylandii 3 109
Cupressus spp.
 diseases 1 139, 142, 2 119, 3 74
 in Colombia 4 101
 insects 4 131
 N. American hybrids 2 16
 windbreaks 1 139, 2 91
 wood
 effect of chemicals 2 304
Cupressus arizonica
 anatomy 5 166
 diseases 3 338
 frost injury 4 53
Cupressus arizonica—cont.
 in northern Mexico 5 169
 insects 5 284
 windbreaks 4 229
 wood
 durability 3 222
C. arizonica var. *bonita* (*C. glabra*) 2 119, 3 222
C. bakeri
C. benthami see *C. lusitanica* var. *benthami*
C. cashmeriana 1 209
C. dupreziana 5 10
C. forbesii 1 139, 2 290
C. glabra see *C. arizonica* var. *bonita*
C. goveniana 1 139
C. guadalupensis 2 119
C. horizontalis see *C. sempervirens* var. *h.*
C. lambertiana see *C. macrocarpa*
C. lawsoniana see *Chamaecyparis l.*
C. lusitanica (*C. mexicana*) 2 89, 171, 208, 3 35, 4 158
C. lusitanica var. *benthami* 2 26, 308, 4 83
C. macnabiana 1 139
C. macrocarpa (*C. lambertiana*)
 diseases 1 139, 142, 3 75
 forest floor 2 186
 frost hardy 5 197
 in Argentina 4 88
 in Camerouns 2 208, 3 280
 in N. Zealand 1 33
 increment 2 263
 natural hybrid 3 109
 reclamation of sand-dunes 2 59
 timber tests 4 170
 windbreaks 4 229
C. mexicana see *C. lusitanica*
C. montana 2 119
C. nevadensis 1 139
C. nootkatensis see *Chamaecyparis n.*
C. pygmaea 1 139
C. pyramidalis see *C. sempervirens* var. *stricta*
C. sargentii 1 139
C. sempervirens
 afforestation in Atlas Mts. 1 39
 diseases 1 142, 2 26, 122, 3 247, 4 190
 in Provence 1 264–5
 in southern U.S.S.R. 2 208
 reclamation of sand-dunes 2 91
 — var. *horizontalis* 1 260
 — var. *stricta* (*C. pyramidalis*) 1 169
C. thyoides see *Chamaecyparis t.*
C. torulosa 2 208, 5 35, 113
Curatella americana 5 qp
Curtisia faginea 1 37
Cybistax chrysea 2 201
Cyclobalanopsis spp. 3 294
Cyclobolium spp. 3 294
Cydonia vulgaris 1 136
Cylicodiscus 2 203
C. gabunensis 1 211
Cymbopetalum lanugipetalum 4 96
C. magniflorum 5 106
Cynometra spp. 4 110, 223
C. alexandri 1 84, 114, 4 109
C. grandiflora 4 110
C. polyandra 4 231

SPECIES INDEX

- Cyrilla racemiflora* 5 20
Cytisus laburnum 3 108
C. scoparius 5 89
- Dacrydium* spp. 3 294
D. compressum 2 34, 265, 3 224, 338, 4 109
D. elatum 1 271, 314
D. falciforme 1 271
D. franklinii 5 271
D. lycopodioides 5 244
Dacryodes spp. 4 231
D. excelsa 5 46
Demonorops ochrolepis 4 51
Dalbergia spp. 2 266, 3 294, 4 41, 5 113, 181
D. cearensis 4 231
D. cubiliquitensis 4 231
D. latifolia 1 209, 3 301, 4 168
D. melanoxylon 1 84, 4 109
D. nigra 4 231
D. obtusa 2 127
D. pacifica sp. nov. 3 36
D. paucifoliolata sp. nov. 5 173
D. retusa 2 127, 4 83, 97, 231
D. sissoo
browsing damage 1 313
defoliators 1 115
growth-ring formation 2 301
plantations
in Nigeria 3 299
in Punjab 3 306, 5 30
rooting habit 5 97
slash burning and reproduction 3 213
soil improver 1 133
sowing 2 263, 5 111
spacing 1 209
stump planting 2 263, 5 29
stump storage 2 263
wood
aircraft plywood 4 168
disc dowells 4 244
identification 4 231
roof trusses 5 135
uses 1 7
yield tables (Punjab) 4 136
D. spruceana 4 231, 5 113
D. stevensonii 4 231
D. variabilis 4 231
Daniella sp. 2 40
D. ogea 3 131
D. oliveri 1 113, 4 184
Daphnandra micrantha 3 132
Daubentonia spp. 4 222, 231
Decaspermum spp. 4 97, 231
Degeneria vitiensis gen. et sp. nov. 4 97, 5 244
Dendrobangia 4 222
Dendrocalamus strictus 2 112, 279, 5 24
Deplanchea spp. 4 231
Derris ferruginea 4 183
Detarium senegalense 1 113
Deyeuxia similensis sp. nov. 4 97
Dialium guianense 3 222
Dialypetalanthus 5 22
Dichopsis see *Palaequium*
Dichrostachys cinerea 5 29
Diclidanthera 3 294
Dicliptera minbuensis sp. nov. 4 97
Dicoelia 4 21
Dictyonera 3 308
D. philippinensis 5 113
Dillenia spp. 4 231
Diospyros sp. 1 94, 4 158, 231
D. campechiana sp. nov. 5 173
D. lotus 4 125, 5 258
D. melanoxylon 5 197
D. mespiliformis 5 20
D. sanzaminika 2 90
D. siderophyllus sp. nov. 5 240
D. tomentosa 5 197
D. virginiana 4 16, 218
Dipholis 4 158
Diploptropis 5 113
Dipterocarpaceae 1 151, 177, 249, 2 27, 89
Dipterocarpus spp.
Indian forests 1 83, 151
new Malayan spp. 4 96
resin 4 50
size 3 171
wood
defects 1 177
durability 3 54
identification 5 113
properties 1 173, 3 135
service tests 3 311
uses 2 90
D. baudi 2 218, 219, 313
D. cornutus 2 218, 219, 3 259
D. crinitus 2 313, 3 259
D. grandiflorus 1 33
D. indicus 3 212, 213
D. macrocarpus 5 124
D. oblongifolius 1 20
D. pilosus 1 209, 2 8
D. sublamellatus 3 259
D. turbinatus 1 209, 2 8
D. zeylanicus 1 112, 132, 314, 2 66
Dipteryx 2 27
Dirca palustris 5 55
Discocalyx sylvestris sp. nov. 5 244
Discophora 4 222
Distemonanthus benthamianus 1 211, 4 233
Dodonaea spp. 2 291
Dolichandrone crispa 1 209, 4 100
Dombeia sp. 5 178
D. mastersii 2 263
D. mupangae 1 94
D. schimperiana 2 26
Dooma zeylanica 4 66
Doryphora sassafras 3 132, 4 236
Dracontomelum mangiferum 2 256, 3 48
Drimys 4 223, 5 23, 99
D. winteri 3 101, 5 90
Dryadaphne spp. 4 223
Dryobalanops sp. 1 314, 2 218, spp. nov. 4 96
D. aromatica 1 39, 113 (2), 2 76, 90, 310
D. oblongifolia 1 39, 3 129, 5 130
Dryopteris aculeata 3 160
Durio spp. 3 203, 4 231
Dussia conaceae 5 22
Dyera sp. 1 101, 2 91, 238, 4 231
D. costulata 1 101, 3 193
D. lowii 1 210, 2 264
Dysopsis spp. 5 24
Dysoxylum spp. 1 93, 3 116, 5 173
D. caulostachyum 3 308, 5 113
D. fulvum 2 290
D. malabaricum 1 209, 2 170
D. pettegrexianum 2 172
D. spectabile 1 312
Ekebergia capensis 1 37
Elaeagnus angustifolia 2 36, 134, 3 128, 4 25, 5 197
E. pungens 5 167
Elaeocarpus sp. 1 83, 4 96
E. dentatus 3 338
E. grandis 3 152, 4 31, 5 40, 181
E. kirtonii 4 31
Elaphrium aloexylon 2 155
Elateriospermum tapos 2 90, 4 231
Elizabetha 2 127
Elmerillia 4 223
Elvasia 5 106
Embelia sp. nov. 4 96
E. robusta 4 183
Emmotum 4 222
Endiandra sp. nov. 2 140, 4 97, 223
E. sieberi 4 243
E. virens 4 243
Endlicheria 4 223
Endospermum spp. 3 193, 232, 4 110, 231
E. chinense 2 90
E. malaccense 2 90, 91, 5 187
Entada phaseoloides 4 243
E. sudanica 4 184
Entandrophragma spp. 1 94, 2 40, 279, 3 280, 5 7
E. angolense 1 84
E. caudatum 1 226
E. cylindricum 1 84, 5 62, 186
E. excelsum 1 84
E. stolzii 2 89
E. utile 1 84, 2 171
Enterolobium sp. 4 106
Eperua falcata 1 113, 2 127, 311, 3 61, 5 130
Epiprinus 4 21
Erblichia sp. nov. 3 36
Erechthites hieracifolia 2 158
Eriobotrya sp. nov. 3 292
E. japonica 4 191
Eriodendron anfractuosum 4 89
Eriophyes itaiae 5 10
Erythrina 3 23, 5 244
E. sp. 1 248, 3 206, 4 21, 106, 5 285
E. guatemalensis 4 21
E. indica 5 238
E. ivorensis see *E. micranthum*
E. suberosa 4 121, 5 187
Erythrophloeum africanum 2 170, 3 256
E. guineense 4 109, 216
E. micranthum (*E. ivorensis*) 1 135
Erythroxylum spp. 5 19
E. monogynum 4 27
E. multiflorum sp. nov. 5 169
Eschweilera odora 5 113
E. subglandulosa 1 210, 3 137
Esenbeckia spp. 4 158
Eucalyptus 1 44, 149, 4 19, 233, 5 53, 79, 183

SPECIES INDEX

Eucalyptus spp.
 diseases 4 125, 171, 188, 5 281
 effect of pruning on shoot growth 5 256
 eradication 4 228
 in Brazil 3 128, 4 27, 5 249
 in California 5 109
 in Camerouns 2 208
 in Ceylon 1 112
 in Ecuador 5 19, 52
 in Haiti 1 265
 in Mexico 5 29
 in Netherlands East Indies 4 227
 in Palestine 2 91
 in Paraguay 5 106
 in Punjab 5 30
 in Sardinia 1 167
 in S. Rhodesia 2 89
 in Tripolitania 2 138
 in Turkey 1 33
 in Uruguay 4 84
 insect pests 2 73, 239, 265, 3 168, 343, 5 285
 iron deficiency 2 242
 keys 2 27, 4 32
 moisture requirements 2 298
 wood
 aircraft timber 3 236
 charcoal 4 46, 5 50, 127, 215
 preservation 2 64, 5 48
 pulp 1 46
 service tests 3 311
 tension wood 4 235
 uses 3 152
E. alba 2 263, 308
E. amplifolia 5 249
E. amygdalina 5 249
E. australiana 3 155
E. bicostata 4 180
E. bosistoana 2 339, 4 169
E. botryoides 2 69, 3 218
E. calycogona 3 199
E. cinerea 1 252
E. citriodora
 diseases 4 250, 5 281
 growth studies 4 195
 in Ceylon 1 112
 in Jamaica 1 112
 in Paraguay 5 249
 oil 5 52, 194
 preservative treatment 4 48
E. cladocalyx 3 150, 4 36, 5 234
E. coccifera 5 172
E. conglobata var. *anceps* 5 52
E. deglupta 3 48
E. diversicolor
 dune fixation 4 88
 in Paraguay 5 249
 wood
 bridge timbers 2 68
 chemistry 3 53
 fire resistance 2 304
 plywood 5 264
 strength properties 2 51, 172
E. dumosa 3 199
E. dwyeri 4 250
E. eugenoides 3 132
E. ficifolia 4 57
E. gigantea
 effect of fire 1 188
 effect of guy ropes on growth 2 263

Eucalyptus gigantea—cont.
 effect of sway on growth 2 33
 wood
 aircraft timber 3 329
 fibre tension 2 54
 fire-killed timber 2 60
 properties 2 48, 5 181
 seasoning 3 327
 uses 3 152, 5 41
E. globoidea 3 132
E. globulus
 diseases 4 189
 drought resistance 5 197
 essential oils 4 50, 5 53
 hybridization 4 89
 in Anatolia 1 33
 in California 3 306
 in Ecuador 1 169
 in Jamaica 1 112
 in Paraguay 5 249
 in Spain 5 254
 in Tanganyika 3 207
 in Uruguay 4 88
 insects 3 346
 wood
 fuel 5 191
 mining timbers 4 120
 preservative treatment 5 48
 properties 4 169
 pulp 2 308, 5 265
 seasoning 4 180
 uses 2 90
E. gomphocephala 2 90
E. gomocalyx 3 128, 5 249
E. gracilis 3 199
E. grandis 2 217, 3 152
E. gummifera 5 33
E. gunnii 5 109, 172
E. hemiphloia 2 218, 252, 5 234
E. incrassata 3 199
E. largeana 2 218
E. leptophylla 3 199
E. leucoxylon 2 252
E. longifolia 4 195
E. macrorrhyncha 2 252
E. maculata
 in Ceylon 1 112
 starch depletion 2 304, 4 234
 virus disease 4 250
 wood
 properties and uses 2 90, 3 139, 152, 5 40, 234
E. maideni 3 207, 213, 280, 5 173
E. major 2 44
E. marginata
 coppice cleaning 4 167
 crown area and log volume 3 350
 crown development 1 23
 crown ratio and stocking 1 196
 height-girth curves 2 249
 mid-girth determination 2 76
 stem distribution 1 196, 3 87
 thinning 2 43
 wood
 bridge timbers 2 68
 chemistry 3 53
 fire resistance 2 304
 seasoning 3 327
 service tests 3 311
 strength tests 2 172
E. melliodora 4 31, 5 109

Eucalyptus micrantha 5 24
E. microcorys 1 112, 2 142, 3 42
E. morrisbyi sp. nov. 1 151
E. muelleriana 2 300
E. obliqua 1 159, 2 172, 3 325, 4 43
E. oleosa 3 199
E. ovata var. *aquatica* 5 172
E. paniculata
 in Bechuanaland 5 109
 in Paraguay 5 249
 stem form 2 338
 wood
 analysis 3 150
 durability 2 143
 preservative treatment 2 313
 quality of young trees 2 142
 strength tests 3 52
E. pilularis 2 142, 4 36
E. platyphylla 2 263
E. polybractea 3 199, 4 50
E. propinqua 2 44, 4 250
E. pulverulenta 5 172
E. punctata 2 44, 4 250
E. redunca 2 68, 3 331
E. regnans
 artificial regeneration 2 211
 effect of fire 1 188
 in Tanganyika 3 307
 wood
 aircraft timber 3 329
 bending tests 5 187
 fire-killed timber 2 60
 holocellulose 3 53
 lignin extraction 2 302
 match stock 4 236
 plywood 3 317, 4 236
 properties 5 181
 seasoning 3 327
 uses 5 41
E. resinifera 5 249
E. robusta
 artificial regeneration 1 113
 diseases 5 281
 growth studies 4 195
 in Camerouns 2 208, 3 213, 280
 in Ceylon 1 112
 in Malaya 2 263
 in Uganda 4 261
 on swampy sites 5 178
 silviculture 5 7
E. rostrata
 artificial regeneration 1 113
 charcoal 3 328
 in Anatolia 1 33
 in Argentina 4 88
 in Bechuanaland 5 109
 in Camerouns 3 213, 280
 in Italy 1 167
 in Paraguay 5 249
 in Punjab 2 214
 insects 4 132, 5 285
 sand fixation 2 91
 vegetative propagation 3 108
 wood anatomy 1 93
E. rudis 1 252, 4 250
E. saligna
 erosion control 4 153
 growth studies 4 195
 injury from drought 4 186
 insects 2 292
 on swampy sites 5 178

SPECIES INDEX

Eucalyptus saligna—cont.

- silviculture 5 7
- virus disease 4 250
- wood
 - analysis 3 150
 - durability 2 265
 - fire resistance 3 139
 - fuel 5 191
 - mechanical strength 3 311
 - mining timbers 4 120
 - preservative treatment 2 265, 4 146, 5 48
 - utilization 2 217, 290

E. sideroxylon 2 252

E. sieberiana 2 172, 300

E. Stuartiana 5 249

E. tereticornis

- disease resistance 4 250
- growth studies 4 195
- in Paraguay 5 249
- insects 2 339
- vegetative propagation 1 252
- wood
 - properties 2 300, 3 48
 - strength tests 2 172

E. torelliana 1 114

E. uncinata 3 199

E. urnigera 1 252, 5 172

E. verrucosa 5 172

E. viminalis 4 88, 89, 5 234

E. whittinghamensis 5 172

Eucommia ulmoides 2 219, 3 50, 5 53

Eucryphia billardieri 3 329

E. lucida 4 31

Eugenia spp. 2 8, 3 206, 314, 4 97, 158, 231

— spp. nov. 3 36, 4 159, 5 169

E. ardisioides sp. nov. 5 169

E. axillaris 5 192

E. chiquimulana sp. nov. 3 36

E. confusa 3 137, 5 192

E. gustavioides 2 300

E. jambolana

girdling 5 78

growth rings 1 171

in Hawaii 1 148

in India 2 199, 5 9

seasoning 2 59, 4 241

shade-bearer 1 209

E. (Jambosa) jambos 1 148, 5 173

Eugenia marchiana 5 19

E. rhombica 5 192

Euonymus europaea 5 286

E. hamiltoniana 5 286

E. japonica 5 183

E. verrucosa

bark anatomy 1 151

cultivation 4 51

diseases 1 141

gutta-percha production 1 151, 184, 291, 5 54

phenology 1 151

polymorphism 1 151

root system 3 29

seed production 1 151

seed treatment 1 161, 2 36

wood structure and properties 1 151, 170

Eupatorium pallescens 2 158

Euphorbia geniculata 2 158

E. tirucalli 5 272

Euphorbiaceae 5 106, 165

Euroschinus falcatus 5 18

Eurya spp. nov. 1 150, 3 292, 4 231

Eurycoma spp. 4 231

Eurypetalum batesii 2 179

Eusideroxylon zwageri

distribution 1 26

regeneration 1 26, 259

wood 1 26

durability 1 211, 2 265, 3 137, 321

Euxylophora paraensis 5 113

Evodia spp. 3 37

E. ponapensis 4 20

Excoccaria aboriana sp. nov. 5 243

E. agallocha 5 44

Exocarpus aphylla 4 92

Exothea 5 19

E. paniculata 2 18

Fagaceae 2 24, 3 294, 5 22, 98

Fagara monophylla 1 41

Fagraea sp. nov. 4 223

Fagra americana see *F. grandifolia*

F. crenata 5 116

F. grandifolia (*F. americana*)

composition of litter 2 113, 115, 3 284, 5 88

diseases 1 143, 2 18, 326, 3 76, 5 137, 199, 278

ecology 5 239

effect of fires and cutting 3 211

fertilizers and seed production 1 18

fire resistance 3 160

growth studies 3 175, 209, 5 67

injury from

deer 4 21

frost 5 274

increment borings 2 123

porcupine 3 164

rabbits 2 247

insects 2 91, 3 347, 4 133, 5 62

mycorrhiza 2 11

nutrition 1 251

photoperiodism 1 228

prehistory 3 97, 5 8

seed production 1 18

soil morphology and growth 2 187, 293

transpiration 1 81

volume tables 2 330, 3 349 (2), 4 257

wood

chemical composition 4 34

decay and loss of calorific value 5 39

durability 2 62, 3 62

grading of logs 5 185

properties and uses 3 132

pulp 2 57, 3 320 (2)

sawmilling 2 221, 309

F. japonica 2 221, 309

F. mexicana sp. nov. 2 201

F. orientalis 1 246, 2 201, 4 105

F. sylvatica

chlorophyll content of leaves 5 90

chlorosis 3 71

density and ground vegetation 5 209

diseases 1 188, 2 143, 3 53, 4 125, 5 279

disinfection of mast 1 256

Fagus sylvatica—cont.

distribution of diameter increment 4 135

fertilizers 4 233

foliage and increment 3 175, 5 27

heartwood formation 5 257

hedges 1 262

immune to lightning damage 1 127

in Basses Vosges 2 33

in Jugoslavia 1 25

in Northern Silesia 5 251

in Pyrenees 1 85

in Sweden 5 15

increment 5 27

influence of sea wind on 4 186

injury from

frost 4 53

glaze ice 3 70

sea spray 3 71, 4 245

insects 1 190 (2), 5 25, 174, 201

litter decomposition 1 16, 76, 3 21, 4 162, 5 232

mixtures 1 178 (2), 253, 2 32, 68, 3 216, 4 100, 5 248

natural regeneration 3 122, 4 100

nutritive value of mast 5 272

prehistory 3 15

root growth 1 157

root system 2 113

seed

production 1 18, 34

testing 3 125, 4 102

treatment 1 256

succession on chalk 5 30

thinning 1 167, 5 255

transpiration 3 106

vegetative propagation 5 93

water régime 2 31

wood

ash analysis 5 129

assortment table 1 281

battery separators 5 51

calorific value 2 49, 4 48

charcoal 1 48, 5 127

chemical bending 4 115

chemical composition of bark 3 106, 5 17, 239

chemical composition of wood 3 136, 5 259

chemical utilization 5 44 (2)

cleavage strength 4 34, 232

decay 4 41, 5 184, 259

discoloration 1 100

durability 1 176, 5 266

false heart 3 55

fireproofing 2 312

improved wood 2 307

laminated wood 2 56

lignin 1 276, 2 302

parquet blocks 4 48

pitch 3 155

plywood 2 148 (2)

preservative treatment 1 46, 287

producer-gas fuel 2 316, 4 44 (2), 241

properties 1 93, 4 108, 5 27, 34, 35, 5 183

pulp 1 45 (2), 46, 2 57, 149, 4 40, 175, 5 37

rafters 5 182

seasoning 1 100, 173, 177, 2 310

SPECIES INDEX

Fagus sylvatica—cont.
 wood
 strength/moisture ratio **1 314**
 tannin content **5 116**
 wood wool **2 57**
 yield tables **2 77, 78**
Faurea sp. **2 171**
F. macnaughtonii **1 37**
Feronia elephantum **4 27**
Ferula foetida **1 247**
Ficus spp.
 in India **2 199**
 in Panama **5 19**
 in Papua **2 37**
 in Polynesia **2 201**
 insects **3 343**
 new species **4 158, 231**
 wood
 durability **3 137**
 pulp **4 40, 5 55**
F. bengalensis **5 197**
F. cabusana sp. nov. **3 36**
F. carica **1 136**
F. chaponeensis sp. nov. **4 223**
F. elastica **4 154, 5 53, 272**
F. glomerata **5 195**
F. gnaphalocarpa **4 184, 197**
F. nitida **1 260**
F. platyphylla **2 238**
F. religiosa **5 197**
F. soatensis sp. nov. **4 223**
F. vogelii **5 272**
Fitzroya cupressoides **3 101, 4 106, 5 180**
Flacourtia spp. **4 231**
 Flacourtiaceae **3 309**
Flindersia spp. nov. **1 151, 3 37**
F. acuminata **3 132**
F. australis **5 18**
F. bourjotiana **3 152**
F. brayleyana **3 317, 329, 4 235, 5 40, 181**
F. ifflaiana **3 48**
F. oxleyana **2 44, 152**
F. pubescens **3 152, 5 181, 263**
F. schottiana **3 152**
Forsythia viridis **1 134**
Frangula alnus see *Rhamnus frangula*
Fraxinus spp. spp. **2 22, 284, 4 26**
F. americana
 afforestation **3 215, 5 31**
 diseases **1 143, 3 77**
 eccentric growth **5 260**
 ecology **5 239**
 epicormic branching **2 171**
 fertilizer treatment **3 286**
 hedges **5 112**
 hybrid crosses with *F. excelsior* **5 93-4**
 in British Columbia **3 119**
 in Russia **2 133**
 increment **3 119, 209, 5 67**
 and rainfall **3 260, 5 247**
 injury from
 frost **5 274**
 hurricane **3 156**
 lightning **5 274**
 oil spray **5 136**
 porcupine **3 251**
 rodents and deer **4 58 5 140**

Fraxinus americana—cont.
 insects **5 66, 140, 203**
 management **2 85**
 mineral content of leaves **2 115, 3 284, 5 88**
 mycorrhiza **5 11**
 nutrition **1 251, 3 21**
 oxygen consumption of woody tissue **2 190**
 season of sowing **4 26**
 seed storage **2 37**
 seed treatment **2 115**
 seedling growth **5 165**
 silviculture **2 264**
 soil requirements **3 41, 120, 4 92, 5 25**
 thinning **3 87**
 vegetative propagation **1 90**
 volume tables **1 298, 2 162, 249, 3 172**
 wood
 durability **2 62, 153, 3 62, 4 178**
 grading standards **3 330**
 preservative treatment **5 189**
F. chinensis **2 296**
F. elatior **4 233**
F. excelsior
 convection of heat in stem **1 135**
 diseases **1 141, 2 19, 120, 3 249, 5 204**
 distribution of diameter increment **4 135**
 dune fixation **4 88**
 effects of cold **1 235**
 general account **1 151, 4 106**
 growth substances **2 283**
 hybridization and propagation **5 93-4**
 in Slovakia **5 249**
 in Sweden **5 15, 176**
 injury from
 deer **1 104**
 frost **4 53**
 glaze ice **3 70**
 sea spray **3 71**
 influence of ground flora on regeneration **2 207**
 insects **4 132, 5 25, 204, 285**
 litter decomposition **1 76, 4 162, 5 232**
 management in Ukraine **4 23**
 prehistory **2 181**
 root growth **1 157**
 root systems in steppe and desert soils **1 144-5, 3 112**
 seed dispersal **4 226**
 seed treatment **2 36, 4 226**
 succession on chalk **5 30**
 tree form **5 247, 249**
 wood
 calorific force **2 49**
 characters and properties **1 93**
 chemical composition **2 221, 5 116, 129**
 density/quality relation **4 171**
 fat content **4 109**
 fireproofing **2 312**
 identification **5 181**
 pulp **5 31**
 reaction wood **2 45**
 storage **1 315**

Fraxinus excelsior—cont.
 wood
 strength properties **1 314, 3 135, 4 108, 232, 242, 5 182, 183**
 tension wood **1 314**
 unsuitable for plywood **3 228**
F. japonica see *F. mandshurica* var. *japonica*
F. lanceolata see *F. pennsylvanica* var. *lanceolata*
F. mandshurica **1 144-5, 3 112, 347**
 — var. *japonica* **3 23, 4 233**
F. nigra **2 18, 3 213, 5 278**
F. oregona **5 125**
F. ornus **2 15, 3 112**
F. pallisae **3 202**
F. pennsylvanica
 cork formation **3 290**
 disease **1 143**
 drought resistance **3 112, 335**
 in S. Dakota **3 204**
 mycorrhiza **5 11**
 pulp **5 44**
 seed treatment **3 213**
 yield on prairie soils **4 87**
F. pennsylvanica var. *lanceolata*
 disease **1 143**
 drought resistance **1 269, 2 292**
 frost hardy **5 197**
 germination tests **4 25**
 in N. Dakota **4 94**
 in Nebraska **4 157**
 insects **5 66**
 on South U.S. bottomlands **2 218**
 pulp **5 123**
 rodent damage **4 59**
 root pruning **2 212**
 shelterbelts **1 269, 5 112, 255**
 soil requirements **2 12, 4 23**
 succession **4 53**
 yield on prairie soils **4 87**
F. pubinervis **3 23**
F. rhynchophylla **3 112**
F. sambucia **3 23**
F. sieboldiana **3 23**
Freziera **4 21**
Funtumia elastica **4 122, 183, 5 132, 133, 195, 272**
Galiniera coffeoides **1 248**
Gamblea **3 292**
Garcinia spp. nov. **4 20, 5 19**
G. cambogia **2 66**
G. echinocarpa **4 51**
G. morella **2 66**
Gardenia erubescens **4 197**
G. ternifolia **4 197**
Garrya elliptica **1 262**
Garruga floribunda **3 308, 5 113**
Geissois benthani **3 307, 329, 4 236, 5 263**
G. lachnocarpa **4 219**
Geniostoma spp. **2 127, 4 223**
Ginkgo biloba
 cytology **5 16**
 diseases **4 55, 125**
 historical account **5 103**
 in Ukraine **4 98**
 shoot growth **5 97**
 wind resistance **2 205**
 wood anatomy **3 308**

SPECIES INDEX

- Gleditsia* hybrids 2 16
G. amorphoides 2 264
G. assamica 4 20
G. japonica 2 120
G. triacanthos
 cold storage of nursery stock 3 44
 diseases 2 120, 191, 3 162, 5 280
 drought resistance 2 292, 3 335
 immunity to *Fusarium* 3 162, 5 279
 in Texas 3 129
 mycorrhiza 5 11
 rabbit damage 2 247
 root system in desert soils 3 112
 seed treatment 4 101
 soil requirements 3 298
 wind resistance 2 205
 wood
 durability 5 183
 preservative treatment 5 189
G. triacanthos var. *inermis* 4 25, 158
Glochidion spp. 4 231
G. hongkongense 4 17 (2)
Gluta spp. 1 209
G. rengas 4 216
G. travancorica 1 209, 2 170, 3 212
Glycoxylon spp. 4 159
Glyptostrobus pensilis 4 17
Gmelina arborea
 artificial regeneration 2 263
 damage from drought 2 89
 host of Teak pests 1 114
 in Chittagong 2 8
 insects 1 191
 leaf anatomy 5 238
 plantations 2 207, 211, 299
 underplanting 1 208, 209
 wood
 seasoning and preservation 1 94
 uses 2 90
G. leichhardtii 4 169
Gomphandria spp. nov. 4 96
Gonioma kamassi 1 37
Gonzalagunia exaltata sp. nov. 3 36
Gordonia lasianthus 5 193
Gossweilerodendron sp. 2 203
G. balsamiferum 1 211
Goupia glabra 5 113
Gourliea sp. 4 106
Grevillea sp. 3 168, 5 18, 178, 285
G. robusta 1 112, 2 22, 90, 91, 5 20, 136, 271
Grewia spp. 4 40, 231, 5 113, 181
G. elastica 2 48, 3 220
G. flava 4 123
G. salvifolia 5 9
G. tiliifolia 4 49
Grias foetidissima sp. nov. 4 97
Griselinia littoralis 2 127
Gruinales 4 31
Guadua angustifolia 1 312
Guaiacum officinale
 general description 1 172, 5 180
 in Cuba 5 240
 in Dominica 2 112
 in Guatemala 4 83
 properties and uses 1 172, 4 232, 5 113
 resistance to *Pholas* attack 4 171
G. sanctum 1 172, 2 112, 5 180
Guarea spp. 1 94, 2 27, 4 97
Guarea cedrata 5 186
G. glabra 5 19
G. trichiloides 1 41, 3 137
Guazuma ulmifolia var. *tomentosa* 2 141, 308
Guioa spp. nov. 2 291
Guttiferae 2 155
Gymnocladus dioica 1 255, 2 247
Haematoxylon campechianum 2 112, 4 121, 5 19, 109
Halenia spp. nov. 5 102
Haloxylon ammodendron 2 268
H. aphyllum 3 119
H. persicum 3 119, 5 105
Hamamelidaceae 5 104
Hamamelis 4 59
H. virginiana 4 21, 5 130, 274
Hardwickia binata 4 100, 5 29
H. pinnata 5 113
Harpullia spp. nov. 2 291
Hedyocarpus sp. 2 127
Helicia spp. nov. 4 96
H. tsangii 5 169
H. vestita var. *mixta* 5 240
Hemicyclia sepiaria 2 199
Henoontia 1 169
H. angustifolia (*Castalaria brittonii*) 5 171
Heritiera 4 231
H. fomes 3 191
H. littoralis 1 314, 4 17
Hernandia sonora 3 137
Hevea brasiliensis
 bud grafting 1 135
 changes in trunk diameter 3 111
 effect of *Imperata* on growth 1 52
 geographical distribution 5 168
 hormone treatment 1 136, 260
 insects 4 193
 nursery practice 4 227
 resistance to disease 2 120
 rubber production 5 133
 in Africa 5 132, 195
 in Australia 5 53
 in Ecuador 5 10
 in India 5 53
 in Panama 5 19
 in S. America 5 133
H. (Siphonia) ridleyana 3 206
Hexalobus monopetalus 4 109
Heywoodia lucens 4 48
Hibiscus spp. 4 40, 193
H. elatus 2 127, 5 203
H. macrophyllus 5 29
H. similis 2 308
H. syriacus 2 134
H. tiliaceus 5 203, 240
H. rosa-sinensis 1 260
Hicoria see *Carya*
Hierogramma 5 98
Hieronyma caribaea 1 210, 3 137
Himantandra 5 104
Himantandraceae 4 96
Hippocrateaceae 2 290
Hippophae rhamnoides 1 262, 2 31, 36, 4 121, 5 172
Holarrhena microterantha 4 122
Holoptelea integrifolia 1 209 2 91, 4 100
Holopyxidium jarana 5 113
Homalium spp. nov. 4 96
H. alnifolium 3 228
H. dolichophyllum 3 228
H. tomentosum 1 112
Homolanthus spp. 4 231
Hopea sp. 2 170, 3 135, 193
H. acuminata 3 135
H. mindanensis 4 35
H. nervosa 3 220
H. pachycarpa 2 265
H. parviflora 1 209, 2 170, 3 212, 215
H. pierrei 3 126
H. plagata 1 41
H. shingkeng 3 294
H. sulcata 3 52
Horsfieldia spp. nov. 3 36
H. amklaal 4 17 (2)
Hovenia dulcis 2 263, 3 213
Humirianthera 4 21
Huodendron parvifolium 5 169
Hura crepitans 3 137
Hydnocarpus sp. 2 208, 4 110, 183
H. merrillianus sp. nov. 5 240
H. wightianus 5 271
Hymenaea courbaril 3 61, 5 110, 240
H. davisii 1 112
Hymenocardia acida 4 109
Hymenolobium excelsum 5 113
H. petraeum 5 113
Hypericum spp. nov. 5 102
Hyphaene crinita 2 171
Icacinaceae 2 290, 3 30, 134, 4 31, 32
Idenburgia spp. nov. 3 116
Ilex spp. 1 262, 2 16, 3 116, 292, 294, spp. nov. 3 36, 294
I. aquifolium 5 200
I. crenata var. *microphylla* 5 197
I. glabra 5 281
I. myrtifolia 5 20
I. opaca
 defoliation 3 238
 diseases 3 77, 341, 4 249 (2), 5 280, 281
 insects 5 142 (2)
I. opaca var. *H. L. Russell* 4 221
I. vomitoria 5 193
Ilicaceae 1 249
Inocarpus 3 115
I. fagiferus comb. nov. 3 115
Intsia see *Azelia*
Ipomoea carnea 2 69
Irvingbaleyia gen. nov. 5 243
Isoberlinia spp. 1 290, 2 170, 201, 264, 4 230
I. dalzielii 4 197
I. doka 3 199, 4 197
Isomerocarpa novoguineensis gen. et comb. nov. 3 116
Ixora spp. 3 37, 294
I. parviflora 2 199
Jacaranda sp. 4 106, 194
J. mimosaeifolia 5 253
Jambosa jambos see *Eugenia jambos*
Jasminum spp. 2 126
Jatropha curcas 2 296
Juglandaceae 1 272, 2 24, 3 30

SPECIES INDEX

- Juglans*
breeding 1 85, 2 16, 3 28, 109
identification 5 181
root cap 1 143
source of vitamin C 5 193 (3)
suppress other plants 5 198
- Juglans* spp. 2 91, 283, 3 125, 4 101, 106
- J. californica* var. *hindsii* 5 234
- J. cinerea*
general account 4 222
germination 4 222, 5 29
in Russia 2 35
prehistory 5 9
root systems in desert soils 3 112
seed treatment 2 36
- J. intermedia* 4 17
- J. major* 2 119
- J. mandshurica* 1 144-5, 2 35, 36, 3 112
- J. nigra*
afforestation 3 215, 296, 5 31
artificial regeneration 4 101
diseases 2 119, 3 342, 5 278
drought resistance 3 335
effect on grass growth 4 200
germination 5 29
in Germany 1 150
insects 4 194
morphological development 4 89
rainfall and growth 5 247
rodent damage 4 58
root systems in desert soils 3 112
seed treatment 2 36
seedling growth 5 165
site index 1 300
soil requirements 1 231, 3 41
vitamin C content 3 66, 5 234
volume tables 2 162, 249, 3 259
wood
durability 4 171, 5 259
fibres 5 55
grading 2 156
properties and uses 3 310, 4 222, 5 114
- J. peruviana* 1 273
- J. regia*
food value of nuts 5 130
hybridization 4 89, 233
increment 5 172
mineral deficiency 4 124
morphological development 4 89, 5 237
seed treatment 2 36
vitamin C content 2 236, 3 66, 5 234
wood
fireproofing 2 312
storage 1 315
- Juliania* 1 169
- Juniperus* 3 109, 5 21
- J.* spp.
adventitious roots 5 17
damage from
sea spray 2 191
wind and drought 3 334
disease 2 119
insects 4 130
invasion of pasture 5 255
wood
durability 4 171
- Juniperus ashei* see *J. mexicana*
- J. barbadensis* see *J. bermudiana*
- J. bermudiana* (*J. barbadensis*) 2 280, 3 61, 5 19
- J. californica* 3 32
- J. cedrus* 2 119
- J. chinensis* 3 252, 338
— var. *japonica* 2 120
— var. *mas* 2 120
- J. communis*
disease 3 247, 4 246, 5 277
essential oil 5 271
fertilizer treatment 3 196
in Denmark 5 250
in Ukraine 4 98
influence on soil reaction 2 281
mycorrhiza 2 11, 5 11
— var. *hibernica* (*J. hibernica*) 2 119, 5 203
— var. *saxatilis* 1 266
- J. excelsa* 3 308
- J. gracilior* 2 112
- J. hibernica* see *J. communis* var. *h.*
- J. horizontalis* 5 166
— var. *douglasii* 2 120
- J. japonica* see *J. chinensis* var. *j.*
- J. macropoda* 5 278
- J. mexicana* (*J. ashei*) 4 88, 122, 5 169
- J. monosperma*
in Northern Mexico 5 169
in S.W. United States 3 175, 5 240
shade and water requirements 5 175
volume tables 4 195
wood
durability 3 222
- J. oxycedrus* 1 184, 3 155
- J. pachyphloea* 3 222, 5 169, 240
- J. phoenicia* 1 226, 2 119, 3 308
- J. procera* 1 209, 2 119, 199, 208, 305, 5 180
- J. recurva* 5 58
- J. sabina* 4 98
- J. scopulorum* see *J. virginiana* var. *s.*
- J. seravschanica* 3 67
- J. utahensis* 2 197, 3 222, 5 26, 175, 240
- J. virginiana*
calcium content of leaves 2 115
cytology 2 124
diseases 1 295, 2 119, 193, 200, 3 247, 338, 4 55, 246, 5 60, 199, 276
drought damage 3 70
drought resistance 2 292, 3 335
hedges 5 255
in India 1 209
in Rumania 1 255
in S. Dakota 3 204
in Ukraine 4 98
influence on soil reaction 2 281
insects 2 213, 3 252, 348, 5 107, 284
leaf pigments 5 90
rust-resistant strains 2 120, 246, 5 199
shelterbelts 3 351
wood
fibres 5 55
- Juniperus virginiana*—cont.
wood
grading 4 182
preservation 4 179
resin pockets 1 44
shingles 1 181
staining fungus 4 189
structure 4 107
- J.* — var. *crebra* 5 171
— var. *scopulorum* (*J. s.*)
disease 3 338, 4 55
germination tests 4 25
in S.W. United States 3 175, 5 240
insects 3 252
seed changes during stratification and germination 4 215
volume tables 4 195
- Jussieuia* 4 17
- Justicia gendarusa* 2 135
- Kaeturea* gen. nov. 5 106
- Kalmia latifolia* 3 307
- Kalopanax pictus* 5 172
- Kayea floribunda* 4 231
- K. sukoena* sp. nov. 4 97
- Kateeria* 4 17
- Khaya* sp. 2 40, 171, 5 7, 176
- K. anthotheca* 1 84, 2 279
- K. grandifoliola* 1 84, 5 20, 245
- K. ivorensis* 1 168, 2 266
- K. nyasica* 5 23
- K. senegalensis* 1 84, 5 253
- Kibara* 3 116
- Kielmeyera coriacea* 3 331
- Kigelia africana* 3 24
- Killipiodendron colombianum* 4 97
- Kingiodendron* spp. 4 223
- Knema* spp. 4 96
- Knightsia excelsa* 5 185
- Koompassia* spp. 4 231
- K. excelsa* 2 235
- K. malaccensis* 2 89, 313, 3 193
- Kydia calycina* 5 44
- Lagerstroemia* sp. 5 113
- L. flosreginae* 2 8, 170
- L. lanceolata* 2 170
- L. parviflora* 1 313, 3 339
- L. racemosa* 2 125
- Laguncularia racemosa* 4 17, 5 192
- Landolphia* spp. 4 122, 5 133, 195 (2), 272
- L. dawei* 5 132
- Lankea acidissima* 3 131
- L. grandis* 2 66, 5 238
- L. schimperii* 1 94
- L. welwitschii* 1 46
- Lantana camara* 2 158
- Laplacea haematoxylon* 5 19
- Larix*
hybrids 1 37, 2 16, 3 109, 202, 351, 4 59, 91, 5 93-5, 96, 250
- Larix* spp.
adventitious roots 5 17
effects of defoliation 2 286
in Norway 5 31
insects 4 129, 131
planting methods 2 296
roots, wood structure 2 133
seed storage 4 25
seed treatment etc. 3 302

SPECIES INDEX

Larix spp.—cont.

- silviculture 2 31
- wood
 - chemical composition 2 302
 - chemical utilization 4 39
 - durability 4 178
 - seasoning 1 211, 3 327
- L. americana* see *L. laricina*
- L. dahurica* (*L. gmelini*)
 - disease 5 199
 - gum 5 131
 - increment 2 77, 3 119
 - insects 3 252, 4 193
 - pulp 2 150, 4 39
- L.* — var. *coreana* 2 143
- var. *olgensis* (*L. koreensis*) 3 109
- L. decidua* (*L. europaea*)
 - 'anticipated' annual shoots 3 208
 - at high altitudes 4 23
 - at low altitudes 4 98
 - breeding 4 91 (2), 5 236–7, 250
 - canker 1 52, 241, 295
 - cone production 2 118
 - direct sowing 2 209, 3 44
 - fertilizer requirements 1 132, 231
 - general account 2 44, 3 118
 - in Denmark 5 250
 - in Latvia 1 169
 - in Rumania 2 24
 - in Switzerland 5 249
 - in Ukraine 4 98
 - in U.S.A. 1 37, 248
 - increment 2 77
 - effect on quality 5 182
 - factors affecting 3 174
 - seasonal 3 209
 - injury from
 - frost 1 242, 4 53
 - glaze ice 3 70
 - sea spray 3 71, 4 245
 - insects 2 327, 3 84, 4 59, 252, 5 65
 - liming 1 77
 - litter decomposition 4 162, 5 232
 - mixtures 4 100
 - mycorrhiza 2 11, 3 103, 4 85, 5 11
 - nursery technique 5 178
 - nutrition 1 132, 231
 - phenology 3 208
 - plantations
 - in New York 3 207
 - in Pennsylvania 4 104
 - planting losses 1 28
 - planting methods 5 178
 - provenance 1 28, 3 26, 38, 109 (2), 4 90
 - regeneration, natural 1 248, 2 264, 294, 3 297
 - root growth 1 157
 - seed production 1 34, 3 124
 - seed testing 1 121, 3 125
 - site quality
 - effect on form and bark 2 77
 - plant indicators 1 258
 - soil requirements 1 77
 - staking 1 32
 - vegetative propagation 5 93
 - water régime 2 31, 3 106, 298
 - wood
 - calorific value 2 49, 4 48
 - chemistry 5 37
 - durability 1 278

Larix decidua—cont.

- wood
 - false-ring pattern 4 258
 - grading 3 237, 330
 - impact bending 1 174
 - pit-props 4 242, 5 49
 - preservation 2 62, 64
 - railway fuel 4 244
 - resin canals 1 95, 174, 4 172
 - slow-grown superior 5 182
 - strength 1 169, 174, 4 170, 252, 5 35, 36, 182
 - water pipes 4 120
 - yield 4 102, 5 246
- < *L. europaeis* 1 37, 4 225
- L. europaea* see *L. decidua*
- L. gmelini* see *L. dahurica*
- L. kaempferi* see *L. leptolepis*
- L. koreensis* see *L. dahurica* var. *olgensis*
- L. laricina* (*L. americana*)
 - cone production 2 118
 - damping off 4 55
 - diseases 5 199
 - in Canada 5 18
 - insects 1 152, 4 194, 5 62, 63, 140, 284
 - mistletoe on 5 59
 - phenology 3 208
 - pioneer in drained bog 4 19
 - plantation of wildings 2 39
 - root system in sand 2 130
 - taxonomy and distribution 3 307
 - teratology 5 92
 - wood
 - durability 2 62, 3 62, 4 178
 - fibres 5 55
 - grading 4 49
 - pulp 2 57
- L. leptolepis* (*L. kaempferi*)
 - diseases 5 199
 - frost injury 1 242, 4 53, 54
 - immune to browsing 5 62
 - in Denmark 5 250
 - in India 1 209
 - in Ukraine 4 98
 - in U.S.A. 1 37, 3 212, 4 104
 - increment 2 77, 3 119
 - insects 3 252, 5 65
 - mycorrhiza 3 103
 - on peat soil 1 208
 - provenance 3 109
 - seed testing 1 120
 - wood
 - delignification 1 285
 - durability 1 278, 3 222
 - pulp 1 285, 2 150 (2)
 - strength 4 170
- L. occidentalis*
 - diseases 5 199, 243
 - effect of sulphur dioxide 1 243, 315, 2 258
 - general account 2 44
 - grazing and reproduction 5 140
 - increment 3 119
 - factors affecting 3 174
 - measurement 3 258
 - wood
 - grading 3 330
 - mining timbers 4 48
- L. potaninii* 4 98, 5 139

Larix sibirica

- in Ukraine 4 98
- increment in mixed stands 5 287
- natural regeneration 2 294
- on chernozem soil 3 207
- provenance 3 109
- resin production 3 67
- shade tolerance, effect of soil on 2 31
- vegetative propagation 1 136
- Lasiodiscus mildbraedii* 4 109
- Lauraceae 1 246, 249, 2 27, 198, 4 32
- Laurelia aromatica* 3 101
- L. novae-zelandiae* 5 185
- Lauremerrillia* gen. nov. 4 223
- Laurus nobilis* 1 260, 4 50
- Lavandula vera* 5 271
- Leea* spp. nov. 4 20
- Lecythis costaricensis* 4 216
- Leguminosae
 - classification 5 172
 - in Brazil 3 206
 - in Mozambique 4 21
 - in Philippines 1 151
 - in tropical America 2 201
 - mycorrhiza 1 131, 145
 - preservation 2 90
- Lepiderema* sp. nov. 2 291
- Leptospermum citratum* 4 50, 122, 244
- L. scoparium* 3 235
- Lereticia* 4 21
- Leucaena*
 - hybrids 3 66
 - Javanese spp. 3 297
- L. glauca* 1 299, 2 158, 3 66, 343, 5 29
- Levieria* sp. nov. 3 116
- Libocedrus* 5 98
- L. bidwillii* 3 338
- L. chilensis* 4 106, 5 58
- L. decurrens*
 - anatomy 5 32
 - diseases 2 119
 - distribution 3 32, 5 32
 - fire susceptibility 2 196
 - insects 2 196
 - physiology 3 209, 4 230
- Licania* spp. nov. 3 36
- L. hypoleuca* 3 222
- Ligustrum* spp. 1 262, 2 126, 4 231
- L. japonicum* 1 260, 5 167
- L. lucidum* 2 296, 5 167
- L. ovalifolium* 1 260
- L. vulgare* 3 112
- Limonia acidissima* 2 66
- L. alata* 2 199
- Lindera* spp. nov. 3 36, 292
- Linociera* spp. nov. 2 126, 290, 4 96, 5 244
- L. zeylanica* 2 199
- Liquidambar styraciflua*
 - diseases 2 18, 3 342, 5 260, 281
 - general account 5 180
 - girdling 5 78
 - increment, factors, affecting 3 40, 5 247
 - thinning 3 87
- wood
 - colour in relation to toughness 5 261
 - durability 2 62

SPECIES INDEX

Liquidambar styraciflua—cont.

- wood
 - pulp 2 91, 3 319, 4 40
 - seasoning 2 229, 3 148
 - sleepers 4 182
- Liriodendron* 3 192
- L. tulipifera*
 - buds, chemical changes during dormancy 3 199
 - cork formation 3 290
 - diseases 2 193, 3 76, 4 125, 5 278
 - control by release 2 174
 - epicormic branching 2 171
 - general account 2 44
 - increment, factors affecting 3 209, 260, 5 247
 - injury from
 - deer 5 140
 - lightning 2 284, 5 274
 - salt spray 2 118, 191
 - snow 3 76
 - leaf, calcium content 2 115
 - management 2 85
 - mineral nutrient
 - content of litter 2 215, 3 284
 - requirements 1 251, 286
 - seed
 - collection 2 295
 - germination 5 110
 - production 3 124, 302, 4 101, 5 28
 - weight 5 29
 - seedling growth and survival 3 129, 4 227, 5 165
 - soil and aspect requirements 2 171, 3 41
 - soils under 1 231
 - thinning 3 87
 - transpiration 5 164
 - use in afforestation 5 31
 - volume tables 1 298, 2 76, 249, 3 172 (2)
 - weeding 4 228
- wood
 - aircraft construction 5 115, 214
 - collapse 3 55
 - colour in relation to toughness 5 260
 - durability 3 62
 - strength 5 115
 - uses 2 300
- Lithocarpus* spp. 1 239, 2 27, 4 222, 5 22
- Lithraea molleoides* 5 270
- Litsaea* spp. 1 50, 2 140, 3 36, 292, 4 231, 233
- L. calicaris* 5 185
- L. ferruginea* 3 218
- L. longifolia* 4 123
- L. matudai* 5 173
- L. reticulata* 3 152, 218, 4 243
- Lobelioidae 5 23
- Lomatia* spp. 4 106
- Lonchocarpus* sp. 4 159, 5 19
- L. bussei* 1 94
- L. monofoliaris* 5 106
- Lonicera nitida* 1 262
- L. tatarica* 1 261
- Lophira* spp. 3 280
- L. alata* 3 53
- L. procera* 1 93, 2 45, 50

- Loxodia brownii* 1 84
- L. klaineana* 5 176, 186
- Loxopterygium sagoti* 1 113
- Lucuma austini-smithii* sp. nov. 3 36
- Ludwigia* 4 17
- Luehea* spp. 4 106
- Lummitzia littoralis* 4 17
- Lysiloma bahamensis* 2 18, 5 192
- L. sabicu* 5 240
- L. thornberi* 4 216
- Maba buxifolia* 2 199
- Macaranga* spp. 4 21, 231
- M. megalophylla* 2 90
- Machaerium* spp. 3 116, 4 231
- Machilus thunbergii* 1 277
- Maclura (Toxylon) pomifera*
 - cold storage of nursery stock 3 44
 - durability of wood 4 171, 5 183
 - for farm planting 4 138
 - in Texas 3 129
 - natural dye 4 121
 - seed germination 4 25
 - susceptible to frost injury 5 197
- Macrolobium* 3 37
- M. modicopetalum* 5 106
- Macroule* gen. nov. 4 158, 170
- Madhuca (Bassia) latifolia* 5 195, 237
- M. tsangii* 5 169
- Maerua crassifolia* 5 10
- Maesa* spp. 4 96
- Maesopsis eminii* 1 84, 2 40, 279
- Magnolia* spp. 2 16, 191, 312, 5 14
- M. acuminata*
 - calcium content of leaves 2 115
 - epicormic branching 2 171
 - general account 4 120
 - mineral nutrient content of litter 3 284
 - seed treatment 1 255
 - use in afforestation 5 31
 - volume tables 2 162, 249
- M. allenii* sp. nov. 3 36
- M. fraseri* 5 278
- M. grandiflora* 3 238, 338, 4 230, 5 61, 138, 196
- M. portoricensis* 4 226
- M. soulangeana* 1 262
- M. splendens* 4 226
- M. tripetala* 5 278
- M. virginiana* 4 230, 5 20
- Mallotus* spp. nov. 2 290, 3 116, 4 231
- M. philippinensis* 2 190, 5 132, 195
- Malosma* 2 140
- Malus angustifolia* 5 281
- M. pumila (Pyrus malus)* 1 136, 260, 2 36, 133, 181
- M. silvestris* 4 226
- Malva viscus* 5 19
- Mammea ebbero* 1 169
- Mangifera* spp. 4 20, 231, 5 19
- M. indica*
 - air seasoning 2 59, 3 63
 - aircraft plywood 4 168
 - in Central Provinces 2 199
 - in Deccan 5 9
 - seedbed requirements 4 27
- Manghetia glauca* 2 308
- M. insignis* 1 255
- Manihot* sp. 4 159, 5 132

- Manihot glaziovii* 5 33, 195, 272
- Manilkara* 4 159, 5 21
- M. bidentata* 3 137
- M. butugi* 2 126
- M. howardii* 5 106
- M. jamaici* 4 159
- Maniltoa* sp. nov. 4 223
- Mappia* 4 21
- Markhamia lanata* 1 94
- M. platycalyx*
 - durability of wood 4 109
 - general account 1 84
 - insects 2 292
 - silvicultural treatment 2 279, 5 7
 - slash burning and regeneration 3 213
 - transplanting 2 263
- Marmaroxylon racemosum* 2 201
- Mascarenhasia elastica* 4 122
- Mastixiodendron* spp. nov. 4 223
- Maytenus boaria* 3 332
- Mearnsia* spp. nov. 4 20
- Medusanthra* 5 243
- Melaleuca alternifolia* 4 51
- M. bracteata* 4 51, 5 19
- M. leucadendron* 1 26, 112, 3 152, 228
- Melanorrhoea* sp. 1 46
- Melastoma malabathricum* 2 158
- Melia azadirachta* see *Azadirachta indica*
 - var. *australasica* 3 76, 297
- M. composita* 2 264
- M. dubia* 1 93, 3 308, 5 113
- Meliaceae* spp. nov. 2 126, 3 134, 5 173
- Melicope* spp. nov. 3 37
- Meliosma* spp. nov. 4 96
- Memecylon* 3 308, 5 113
- M. spp.* 4 231, 5 244
- M. edule* 2 199
- Menispermaceae* 1 246
- Mercurialis* 5 249
- Meriania panamensis* sp. nov. 4 96
- Merrillia* spp. 4 231
- Mesua ferrea* 2 8, 170
- Metopium* 2 140
- Metrosideros* 4 20
- M. collina* subsp. *polymorpha* 1 148
- M. tomentosa* 2 265
- Michelia* sp. 1 255, 4 171
- M. champaca* 2 301, 4 168, 5 35, 186
- M. excelsa* 4 168
- Miconia dodecandra* 5 19
- Micrandra santanderensis* 5 106
- Microcycas calocoma* 5 97
- Micromelum* spp. 4 231
- Mildbraediendron excelsum* 1 114, 4 109
- Milisia velutina* 5 197
- Milleria* sp. 4 40
- M. ferruginea* 5 90
- M. laurentii* 1 94
- M. pachycarpa* 4 183
- Mimosa* 1 143
- M. bracaatinga* 1 113, 5 249
- M. pudica* 3 162
- M. scabrella* 5 249
- Mimosaceae* 3 294
- Mimusopoideae* 5 104
- Mimusops* see also *Manilkara*
- M. balata* var. *cruegeri* 1 210

SPECIES INDEX

- Mimosa* *djave* 2 45
M. elengi 5 238
M. heckelii 3 53
M. hexandra 5 238
M. huberi 5 113
M. kummel 1 248
M. maxima 2 89
M. parvifolia 4 35
Mischocarpus spp. nov. 2 291
Mitragyna spp. 1 83
M. stipulosa 1 211
Monimiaceae 3 116
Monocotyledoneae 5 166
Montezuma speciosissima 2 35, 4 164
Moquinia polymorpha 2 289
Mora excelsa 3 137, 5 18
M. paraensis 5 113
Moraceae 2 45, 90
Moringa pterygosperma 2 286
M. oleifera 4 15, 5 187
Moronobea coccinea 4 157
Morus spp. 1 248, 5 55
M. alba
 afforestation in the Punjab 3 306,
 5 30
 mineral content of leaves 5 90
 photoperiodism 1 235
 slash burning and reproduction
 3 213
 stump planting 2 263, 5 29
 suppresses weed growth 1 103
 susceptibility to frost 5 197
 transplanting 2 263
 vegetative propagation with
 growth substances 5 235
 wood anatomy 1 93
M. alba var. *tatarica* 4 25
M. australis 2 296
M. indica 2 196
M. laevigata 5 181
M. mesozygia 1 150
M. rubra 2 247, 4 171, 5 183
Mosquitoxylum 3 36
Mouriria spp. nov. 3 36, 116
M. marshallii 3 137
Muntingia 5 19
Muriea eyerdamii sp. nov. 4 158
Musanga smithii 1 27, 46, 54, 135,
 2 203, 3 313, 318, 5 123
Mutisia spp. nov. 5 102
Myrcia longicaudata sp. nov. 5 169
M. schippii 5 169
Myrcia carolinensis 5 283
M. cerifera 4 191, 5 173, 193
M. salicifolia 1 150
Myristica spp. nov. 3 36, 294
M. surinamensis 3 137
Myristicaceae 1 246
Myroxylon peruiferum 5 113
M. toluiferum 1 273
Myrsinaceae 1 249, 3 36
Myrsine spp. nov. 4 96
M. capitellata 4 183
M. semiserrata 4 183
M. urvillei 2 127
Myrtaceae 3 115
Myrtus spp. 4 97
M. communis 1 260, 4 125

Nectandra spp. 4 83, 158, 223, see
 also *Ocotea*
Nectandra caparrapi see *Ocotea* c.
N. oleophorum 5 272
N. rodiaei see *Ocotea* r.
Neea spp. nov. 4 158
N. xanthina 5 106
Neolitsea spp. 4 223
Neowormia ferruginea 2 200
Neptunia robertsonii sp. nov. 4 96
Nerium oleander 2 22, 4 125
Niebuhrria siamensis 4 41
Northea seychellarum 2 199
Nothaphoebe spp. 4 223
Nothopodites 4 21
Nothofagus 1 262, 3 301, 4 106, 5
 173
N. cliffortioides 3 301
N. cunninghamii 2 172, 5 40, 41, 263
N. fusca 2 33
N. menziesii 1 55, 2 33, 3 307
N. moorei 1 149, 3 297
N. obliqua 3 101
N. procera 3 101, 292
N. truncata 2 33, 3 293
Nothopanax colensoi 2 127
Nuxia congesta 1 248
Nyssa sp. 4 182
N. acuminata 3 295
N. aquatica
 diseases 5 260
 ecology 1 148-9, 5 102
 nomenclature 3 132
 seed germination 1 237
 wood
 durability 2 62
 fireproofing 4 240
N. biflora 1 147, 2 58, 193, 3 132,
 292, 5 44, 102
N. ogeche 3 132
N. sylvatica
 diseases 2 18, 193, 5 281
 girdling 5 78
 nomenclature, distribution etc. 3
 132, 5 157
 salt-water injury 2 118
 seasoning 2 228
 seed storage 5 110
 volume tables 3 349

Ochanostachys 4 231
O. amentacea 3 193
Ochotereneae colombiana 4 158
Ochrocarpus africanus 2 307, 3 228
Ochroma
 distribution 4 169, 223, 5 10, 261,
 293
 general account 2 218, 3 218, 273
 nomenclature 4 21
 preservative treatment 2 60, 4 238
 type material, evaluation of 4 96
 wood
 drying schedule 1 314
 uses 4 106, 5 258
O. bicolor 2 158
O. lagopus 2 141, 5 29
O. limonensis 2 129
O. pyramidale 2 38, 3 83, 84, 5 203
Ochrosia glomerata 5 107
Ocotea spp. nov. 4 158, 159, 223
O. barcellensis 5 113
O. (Nectandra) caparrapi 3 332
O. bullata 1 37

Ocotea (Nectandra) rodiaei
 logging 3 224
 poisonous properties 4 216
 response to release 1 112
 wood
 properties, uses etc. 1 49, 3 132,
 5 113
 resistance to marine borer and
 termite attacks 2 311, 3 61, 321
O. rubra 5 256
O. usambarensis 2 199
Ocotelmis sumatrana 3 48
Ocopenetulum 4 222, sp. nov. 2 290
Olea sp. 3 325, 5 178
O. capensis 3 162
O. chrysophylla 2 199
O. cordatula 5 169
O. cunninghamii 3 338
O. cuspidata 1 28, 4 231
O. europaea 1 136, 260, 3 162
O. ferruginea 3 162
O. hochstetteri 2 199
Olea laurifolia 1 37, 3 162
O. mussolinii 2 126
O. verrucosa 3 162
Olearia haastii 1 262
Oncoba spinosa 2 26
Oncosperma filamentosa 1 19, 85, 2
 27, 3 333
Ongokea klaineana 3 53
Onohualcoa gen. nov. 4 158
Orbignya cohune 2 169
Orcia sp. 5 51
Ormosia 5 105, sp. nov. 4 223, 5 172
O. avilensis 5 22
O. stipitata 5 106
Orthion gen. nov. 3 36
Osmanthus americanus 3 162
O. aquifolius (O. ilicifolius) 1 262,
 3 162, 5 167
O. megacarpus 5 105
O. suavis 5 167
Ostodes spp. 4 223
Ostrya virginiana 1 152, 234, 2 115,
 3 284, 4 94, 5 174, 234
Osyris arborea 4 92, 93, 5 22
Ottoschulzia 4 222
Ougeinia dalbergioides 1 313, 2 199,
 4 231
Ouratea cataractarum 5 106
O. cernuiflora 5 106
Owenia venosa 1 93
Oxydendrum arboreum 5 112

Pachira insignis 3 137
Pachylarnax pleiocarpa 1 255
Pachylobos barteri 3 228
P. pubescens 1 94
Pahudia rhomboidalis 4 35
Palaquium (Dichopsis) spp. 1 314, 4
 231, 5 113
P. ellipticum 2 170, 4 157, 168, 5 195
P. petiolare 1 114
P. polyantha 2 8
Panax arboreum 2 127
Papilionaceae spp. 3 37
Paradaniella sp. 2 264
Parashorea malaanonan 1 47
P. plicata 3 135
P. stellata 1 314
Parasponia spp. nov. 3 116

SPECIES INDEX

Parastemon urophyllum 1 94
Parathesis spp. nov. 4 96, 158
Parinari (*Parinari*) sp. 2 264
P. corymbosum 3 308, 5 113
P. curatellaefolia 1 113
P. mobola 2 72
P. oblongifolium 3 321
Parinari see *Parinari*
Parkia spp. nov. 4 223
P. filicoidea 4 184
P. speciosa 3 254
Parkinsonia aculeata 5 96
Parrotia jacquemontiana 4 231
P. persica 1 262
Parthenium argentatum 5 1, 53, 168, 272
Pasania 3 294
Patagonula 4 106
Paulownia tomentosa 2 134, 4 109
Pavetta 2 290
Pedilanthus coalcomanensis 5 106
Peltogyne 5 113
Pentaclethra macroloba 3 137
P. macrophylla 2 188
Pentacme contorta 1 36, 47
P. suava 1 250
Pentadesma butyracea 4 51
Pentaphalangium spp. nov. 4 20
Perrotetia spp. nov. 3 116, 206
Persea spp. nov. 2 140, 4 158
P. gratissima 4 125
P. lingue 3 101
P. pubescens 5 20
P. vulgaris 4 125
Petalostigma 4 159
Petitia domingensis 1 297
Phacellanthus spp. 4 21
Phellodendron amurense 1 151, 2 36, 268, 3 112, 5 90
Phillyrea decora 3 162
Phlogacanthus pochinii sp. nov. 4 96
Phoebe 5 113, spp. nov. 4 158, 223
P. goelparensis 4 168
P. lanceolata 1 250
P. mayana sp. nov. 5 169
P. porosa 2 300
Phoradendron flavescens var. *macrophyllum* 4 125
Photinia 3 292
P. arbutifolia 2 186
P. matudai 5 173
P. rufa 3 35
Phyllanthodendron 4 21
Phyllanthus 4 21
P. botryanthus 5 106
P. coalcomanensis 5 106
P. huallagensis 5 106
P. skutchii sp. nov. 3 36
Phyllocladus alpina 3 290
P. hypophyllum 1 271
P. rhomboidalis 2 172, 3 48, 5 269
P. trichomanoides 5 185
Phyllodoce sp. 4 187
Phyllonoma cacuminis sp. nov. 3 36
Phyllostachys sp. 5 24
P. reticulata 4 194
Phyllostylon brasiliensis 2 112
Phytolacca dodecandra 4 243
Picea
distribution in U.S.S.R. 4 226
embryogeny 4 92

Picea—cont.
hybridization 3 109, 5 250
lignin formation in buds 5 183
needle anatomy 1 145
origin of adventitious roots 5 17
seed storage 4 25
use of growth substances to promote rooting 2 338, 4 16, 5 235
wood anatomy 3 308, 4 172
Picea (N. American spp.)
Canadian lumber industry 5 75
cleaning 3 130, 4 28
compression wood 3 55, 139
cost of growing pulpwood 2 130, 3 314
cutting cycles 4 28
decay in insect-killed trees 2 222
diseases 1 247, 3 74, 4 126
growing season 1 5
hybrids 2 16
increment 2 142, 187, 331, 4 135, 228 (2)
injury
logging 4 256
rodent 4 128
salt-spray 2 191
insects 1 240, 2 91, 223, 3 165, 343, 344, 4 129, 5 107–8, 140, 200, 202
log scaling 5 143
natural regeneration 2 34 (5), 171, 207
effect of slash disposal methods 4 151, 163
nursery technique 3 127
rate of deterioration of insect-killed timber 4 131, 5 39
roots, wood structure of 3 133
selective cutting 4 162, 225
silvicultural treatment 1 32
soil treatment and seedling growth 4 150
soil morphology and root development 2 293
sowing season 2 338
thinning 3 130
wood
aircraft timber 4 237
delignification 3 59
ethanolysis 1 175, 2 143, 5 183
grading rules 2 240 (2), 3 65, 330
hydrogenation 2 143
in composite beams 1 49
pulp production 5 122
sawdust as fuel 3 156
strength 1 95
utilization of waste 2 67 (2)
wood flour 3 333
yield tables 2 339, 3 351
P. abies (*P. excelsa*)
afforestation
in Norway 5 31
of moorland 5 249
annual-ring analysis 5 144
assimilation and respiration 2 189
bark
chemical composition 4 15 (2)
percentage of volume 3 85
barking 4 121
branches
habit in relation to increment 3 26

Picea abies—cont.
branches
percentage of volume 3 85
types 5 15, 16, 93, 94, 146, 165, 175, 236
breeding 5 15, 16, 93, 236
climate in the stand 2 215, 4 14
cones 1 82
damage to 5 176
damping off 4 55
diseases 1 103, 141–2, 188–9, 265, 2 16, 19–20, 120, 5 60, 137, 199
drought, effects of 1 243
ecological status 3 34, 292, 5 30
excentricity 5 247
fat content 4 109
fertilizer requirements and treatment 1 77, 132 (2), 264 (3), 2 137, 282, 3 21, 212, 286, 5 11, 12, 88 (2)
forest types 1 148
form 1 192, 3 290 (2), 5 204
girdling 4 110
growing stock in old forests 4 136
in Argentina 4 265
in Denmark 1 163–4, 5 174, 250, 290
in Finland 2 182
in the French Alps 1 150 (2)
in Yugoslavia 1 25
in Latvia, 1 169
in mixtures 1 19, 4 100, 5 207, 248
in Saxony 1 148
in Ukraine 4 98
in U.S.A. 2 171, 209, 3 212, 4 104, 5 26
increment 1 299, 4 134, 135, 5 26, 27, 287
factors affecting 1 18, 40, 192, 3 26, 174, 297, 4 134, 186, 5 333
injury
deer 1 104 (2)
drought 1 243
frost 4 53, 5 274
ice 4 54
salt spray 4 245
snow 2 284, 3 241, 5 274 (3)
wind 1 127, 4 124, 185
insects 1 141, 239, 242, 2 22, 141, 161, 327, 3 84, 344, 4 109, 130, 160, 5 63, 201, 245, 259, 284
interception 4 14, 5 232
liming 1 77 (2)
litter
decomposition 5 232
production 2 114, 5 161
management of pulpwood stands 2 33
microclimate 1 126
mycorrhiza 1 130, 131, 2 11, 3 103, 283, 4 14, 150, 214, 5 11 (2), 160
needles
anatomy 1 145
mineral content 2 115, 3 23
source of fodder and oils 5 194
vitamin C content 5 51
nursery technique 5 178
nutrient requirements 1 132, 2 64 (3), 4 246
phenology 3 208

SPECIES INDEX

Picea abies—cont.

- photosynthesis 1 234, 4 154
- planted *vs.* natural stands 3 300
- planting methods 1 21, 257, 5 178, 253
- pollination 2 16
- production costs (Denmark) 5 290
- provenance 1 34, 3 109, 110, 4 135, 5 16
- pruning 1 40, 167, 3 47, 48
- quality increment, determination of 5 287
- races and varieties 1 36, 82, 4 91
- red rot, effect on pulp yield 4 114
- regeneration artificial 1 255, 256, 3 124, 5 30
- regeneration, natural 1 254, 2 207, 3 122, 5 176, 249, 288
- root depth, factors affecting 1 126
- root distribution and soil type 4 92, 5 25
- root growth 1 157
- root rot 2 19
- roots, stilt 5 283
- seed
 - determination of age 4 102
 - germination 1 36 (2), 89, 4 102, 5 253
 - production 1 34, 2 210, 3 124
 - provenance 1 34
 - size 1 89 (3)
 - testing 1 121, 161, 3 125, 5 252
 - vitamin C content 5 252
 - years 1 135
- silvicultural treatment 3 296, 4 22, 5 27 (2), 208, 248
- site quality 2 333
- slash disposal 4 151
- soil preparation 1 265
- soil requirements 1 16, 77 (3), 265, 2 186, 3 38, 4 151
- sowing 1 256
- spacing 4 102, 5 253
- stand structure 1 300
- stand value estimation 4 260, 5 290
- succession 1 83
- tanbark 3 153 (2), 237, 331 (2)
- thinning 1 92, 2 215, 3 305, 4 28, 5 31, 179, 254
- underplanted to Pine 1 19
- unsuitable for windbreaks 3 217
- vegetative propagation 1 90, 136, 260 (2), 261 (2), 2 40, 135, 213, 297–8, 338, 3 25, 4 16, 89, 217
- volume determination 4 62
- volume tables 3 152, 259, 5 66
- water régime 2 31, 3 106, 297
- wood
 - anatomy 3 308 (2)
 - branch- and knot-wood 2 47
 - calorific value 2 49
 - chemical composition 3 53, 311
 - defects 4 110, 124
 - durability 1 278, 3 222
 - frozen wood 1 42
 - fuelwood 5 186
 - grading rules 3 330, 5 261
 - hardness 2 50
 - hemicellulose 4 34
 - hydrolysis 3 311

Picea abies—cont.

- wood
 - knots
 - origin etc. 5 184
 - effect on pulp 5 260
 - lignin chemistry 2 302, 3 311, 4 232
 - mining timbers 1 101
 - preservative treatment 1 278–9, 2 63, 5 46 (3), 259
 - producer gas fuel 4 44, 47
 - pulp 2 114, 4 40, 5 121
 - effect of knots 5 260
 - effect of red rot 4 114
 - pulpwood
 - measurement 3 173
 - production and prices 2 277 (2)
 - resin tapping 4 256
 - seasoning of pit props 5 49
 - shrinkage 4 33
 - stain fungi 1 141
 - strength properties 1 42 (2), 169, 3 135, 4 232, 5 35, 276
 - wound treatment 1 103–4
 - yield 1 193, 3 175, 4 104, 196, 258, 5 67
 - yield tables 2 77, 78
- Picea ajanensis* see *P. jezoensis*
- P. alba* see *P. glauca*
- P. canadensis* see *P. glauca*
- P. chihuahuana* sp. nov. 5 21
- P. engelmanni*
 - afforestation 4 259
 - direct sowing 1 257, 2 132, 5 110
 - distribution 5 168
 - forest type 5 28
 - general account 4 105
 - grading rules 3 330
 - in Iceland 2 35
 - in Ukraine 4 98
 - insects 5 284
 - interception 4 88
 - moisture requirements 2 32
 - mycorrhiza 1 76, 5 11
 - planting stock 2 171
 - pulp 5 118, 122
 - regeneration, natural 5 27
 - taper 3 258
 - yield 4 259
- P. excelsa* see *P. abies*
- P. glauca* (*P. alba*, *P. canadensis*)
 - bisexual cone 4 17
 - cone production 4 226
 - damping off 4 248
 - direct sowing 2 209
 - disease 3 160, 246, 4 246
 - distribution 5 168, 240
 - fertilizer requirements 3 104
 - fire susceptibility 2 196
 - girdling 4 105
 - hybridization 5 250
 - identification 4 105
 - in Argentina 4 265
 - in British Columbia 1 150
 - in Denmark 5 250
 - in Ukraine 4 98
 - increment, factors affecting 2 293
 - injury from
 - deer 5 174
 - frost 5 197
 - snow 2 284

Picea glauca—cont.

- insects 5 108, 284
- light requirements 5 25, 108
- phenology 3 208
- pioneer in drained bog 4 18
- regeneration, natural 4 24
- root system 2 130
- season of sowing 4 26
- site quality 1 258
- soil requirements 1 78, 2 172
- tolerance of
 - high temperature 2 292
 - shade 5 25, 108
- vegetative propagation 2 213, 297, 3 25, 4 156, 166, 217
- water content of trees 2 17
- wood
 - aircraft timber 1 282
 - bluestain 2 145
 - deterioration of pulpwood 2 145
 - pulp and pulping 5 118 (2), 122, 265
- P. —f. buxoides* 4 221
- P. glehnii* 2 129, 3 82, 343, 4 131
- P. jezoensis* (*P. ajanensis*)
 - in Ukraine 4 98
 - insects 2 122 (2), 286, 3 252, 4 131
 - pulp 3 221, 4 39
 - root system 2 129
 - seed fall 2 190
- P. likiangensis* 4 98, 5 88, 139
- P. mariana*
 - abnormal leaf development 5 92
 - Christmas trees 2 319 (2)
 - direct sowing 2 209
 - disease 2 145, 3 246, 339, 4 194, 246
 - distribution in Canada 5 18, 168, 240
 - fire and reproduction 3 211
 - insects 5 108, 284
 - mistletoe on 4 125, 5 59
 - partial cutting 5 179
 - regeneration, natural 1 160, 3 211, 4 24
 - root system 2 130
 - seed supply 1 246 (2)
 - vegetative propagation 2 213
- wood
 - piling of pulpwood 2 145
 - pulp 2 58, 5 118
- yield tables 1 193
- P. morinda* (*P. smithiana*)
 - natural regeneration 1 209
 - soil profiles 3 282
 - thinning 2 299
- wood
 - aircraft timber 4 168, 5 40
 - pulp 5 44
 - strength properties 3 220, 4 108
- P. morindoides* 5 58
- P. morrisonicola* 5 58
- P. obovata* 2 226
- P. omorika* 4 16, 98
- P. orientalis* 1 175, 2 30, 52, 4 98, 130, 5 64
- P. parryana* see *P. pungens*
- P. pungens* (*P. parryana*)
 - afforestation 4 259
 - bast fibre 5 55
 - cytology 2 124

SPECIES INDEX

Picea pungens—cont.
 disease 3 75, 5 199
 frost injury 5 274
 in Ukraine 4 98
 insects 4 194, 5 284
 salt spray, resistant to 2 118
P. rubens (*P. rubra*)
 aircraft timber 1 282
 disease 3 339
 distribution 1 246, 2 171, 209, 3 175, 5 27, 168
 increment, factors affecting 2 32, 4 136
 insolation injury 4 124
 mineral content of leaves 2 115
 phenology 3 208
 slash, fire hazard 1 186
 soil 2 113
P. rubra see *P. rubens*
P. sitchensis
 afforestation of peat 1 208
 bark, tannin content 4 49
 direct sowing 1 257
 diseases 1 188–9, 2 19, 3 137, 4 189, 5 242
 distribution 3 307, 4 18, 5 20, 168
 epicormic branching 2 294
 frost damage 4 53, 5 197
 general account 2 44 3 307
 in Denmark 5 174, 250
 in Norway 5 31
 insects 1 239, 3 165
 litter 4 151
 mycorrhiza 3 283, 4 14
 prehistory 2 182
 pruning 1 269
 seed germination 2 295
 vegetative propagation 2 135
 windthrow 3 240, 5 116
 wood
 aircraft timber 1 282, 2 65, 3 65 (2)
 anatomy 3 221
 chemical bending 4 115
 delignification 4 233
 durability 1 278, 3 222
 elasticity 4 34
 grading 3 330, 4 182 (2)
 laminated beams 5 188
 mill study 5 117
 pitprops 2 131, 5 49
 pulp 1 98
 quality 5 38
 shrinkage and swelling 3 51
 steaming 5 122
 strength/moisture ratio 1 314
 uses 3 152
 yield 4 102
P. smithiana see *P. morinda*
Picea excelsa 5 259
Piceomna spp. nov. 5 102
 Pinaceae 2 66, 5 11
Pinus
 anti-erosion afforestation 2 283
 bark formation 3 23
 cotyledon numbers 3 28
 diseases 2 91, 193, 285, 322 (2), 3 75, 5 60
 early reproductive maturity 1 245
 height-growth period 3 41

Pinus—cont.
 hybridization 1 236, 2 16, 3 109, 5 95
 insects 2 329 (2), 4 59, 192, 253, 5 200, 203
 mycorrhiza 5 232
 pre-embryonic selection 1 137
 pruning 2 97–107, 139
 resin
 composition 4 115
 extraction 4 115
 production 5 52 (2), 131
 refining 5 131
 roots, wood structure 3 133
 seed
 storage 4 25
 viability 3 302
 sowing 2 133
 stomated foliar surface 5 98
 susceptibility to lightning strike 2 284, 5 274
 vegetative propagation 2 293, 338
 wood
 cellulose formation 2 221
 chemistry 3 153 (3)
 heartwood determination 2 218
 lignin 4 109 (2)
 paint discolouration 4 177
 preservative treatment of poles 2 153, 3 325, 4 178, 179
 sawdust as fuel 3 156
 solvent extraction 5 271
Pinus spp.
 dendrochronology 4 196
 ecology in USSR 1 148
 erosion control 2 69, 5 13
 felling season and borer attack 2 223
 identification key for Tennessee Valley 5 104
 in Dominican Republic 3 101
 in Guatemala 4 83
 in Mexico 1 123
 in Nyasaland 1 19
 in Portugal 3 203
 in Uruguay 4 84
 mistletoe on 5 59
 pioneer on drained bog 4 19
 planting methods 1 160, 2 296, 3 127
 resin ducts of needles 1 145
 resin tapping 2 319, 3 67 (2)
 root development in Palestine 1 23
 seedlings per lb. of seed 3 303
 strength/size ratio 5 17
 vegetative propagation 4 16
 wood
 cellulose production 3 142
 charcoal from sawdust 5 127
 wood flour 3 333
P. albicaulis 3 248, 4 126, 5 201, 277
P. apacheca see *P. ponderosa*
P. aristata 2 285
P. arizonica see *P. ponderosa* var. *a.*
P. armandi 3 205, 4 98
 × *P. attenuuradiata* 1 245
P. austriaca see *P. nigra* var. *austriaca*
P. ayacahuite 5 21, 169
P. banksiana
 afforestation of dunes 2 215, 288

Pinus banksiana—cont.
 climate in the stand 4 14
 cones, conditions for opening 187, 314
 crown growth 2 205
 cytology 2 124
 defoliation, effects of 2 286
 direct sowing 2 209
 diseases 3 75, 137, 246, 4 55, 190 (2)
 distribution 4 135, 5 168
 drought resistance 1 157, 162
 fertilizer requirements 2 298, 338
 germination reduced by fungi 3 246
 identification 4 105
 increment, factors affecting 2 293
 injury from
 browsing 5 62
 sleet storm 3 335
 insects 2 195, 3 166, 4 129, 131, 5 62, 140, 200, 202 (2), 246, 284
 litter decomposition 1 16
 mineral requirements 3 21
 moisture requirements 1 157
 mycorrhiza 2 338, 5 87
 natural regeneration 1 32, 210, 314, 5 28
 needle area 1 127
 photoperiodism 1 228
 plantations 4 104, 5 144
 planting
 methods 1 162, 258, 259, 4 166
 site 1 258
 stock 1 258, 313
 root competition 4 218
 root system in sand 2 130
 seed
 dissemination 1 87, 245
 extraction 1 210, 3 125
 germination 1 210, 245–6
 testing 3 301, 4 25
 viability 3 213
 seedling survival 1 266
 seedlings, multiple 2 288
 shade tolerance, 1 266, 5 108
 shelterbelts 3 351
 soil requirements 1 78, 2 172
 sowing 2 338
 taper table 1 298
 thinning 4 104
 transplanting 2 39, 3 46
 tree classification 5 108
 vegetative propagation 4 216
 water content 2 17
 watering 2 296
 wood
 decay and red stain 4 109
 durability 1 278, 4 178
 height-growth period 5 14
 logging costs 4 197
 phenol constituents of heartwood 5 258
 piled pulpwood deterioration 2 145
 preservative treatment of poles 3 324, 4 177, 178, 5 46
 pulp 1 285, 315, 2 57, 149, 3 60, 5 118
 shrinkage 1 282
 yield tables 2 339

SPECIES INDEX

- Pinus brachyptera* see *P. ponderosa*
P. brutia see *P. halepensis* var. *brutia*
P. bungeana 2 297
P. canariensis
 fire resistance 2 196
 forest floor 2 186
 in Australia 2 263
 in Cyprus 3 205
 in Nyasaland 5 31
 interception and stemflow 3 105
 volume tables 2 92
P. caribaea (see also *Pinus* 'southern')
 direct sowing 1 112
 diseases 2 92, 173, 222, 246, 5 60
 (2), 278
 fertilizer requirements 1 18, 5 89,
 111
 fire resistance 2 196
 general account 1 248
 ice damage 4 245
 in British Honduras 5 10
 in Mauritius 1 113
 in Nyasaland 5 31
 in Tennessee Valley 5 104
 increment 5 23
 insects 2 41, 173, 3 253
 management 1 248, 2 31
 use of fire 4 54
 moisture requirements 1 122-3,
 156
 morphology 5 238
 mycorrhiza 1 18, 209-10, 2 186
 natural regeneration on sand dunes
 3 31
 nutrient requirements 2 264, 338
 photoperiodism 1 228
 plantations in Texas 2 162, 205
 pole specifications 5 192
 polyembryony 3 290
 production cost 5 69
 resin tapping 3 154, 4 122, 5 131 (2)
 resin yield 1 122, 211, 5 194
 seed
 extraction 3 125
 germination 1 112
 law 3 302
 storage 1 161, 2 132
 seedling development and growth
 1 18, 156, 162, 2 134, 212, 5 165
 site requirements in S. Africa 1 28
 spacing 3 127, 4 27
 tannin 5 193
 water absorption at low tempera-
 ture 5 90
 wood
 air seasoning 1 286
 analysis 3 150
 properties 2 90
 pulp 3 142
 sleepers 3 65
 specific gravity 1 173
 steaming 2 220
 strength 1 113, 2 90
P. cembra 2 37, 285, 3 67, 4 89, 157
 — var. *sibirica* (*P. sibirica*) 4 98
P. cembroides 1 248, 4 252, 5 169
 — var. *edulis* (*P. edulis*)
 development of cones 1 237, 3 107
 diseases 2 18, 3 339, 4 55, 5 138
 distribution 3 175
Pinus cembroides—cont.
 insects 4 252
 longevity 5 109
 management 5 54
 mycorrhiza 1 76
 nut yield 2 155
 resin properties 5 270
 selection cutting 2 306
 water requirements 2 32, 5 175
 — var. *monophylla* (*P.m.*) 3 29,
 32, 4 252 (2), 5 26
 — var. *parryana* (*P. quadrifolia*)
 3 32, 4 252
P. chihuahuana see *P. leiophylla*
P. clausa 4 175
Pinus contorta
 acreage in U.S. 2 169
 afforestation of
 burnt-over land 5 28
 catchment areas 4 259
 peat 1 208
 sand dunes 4 215, 5 89
 diseases 3 137, 335, 4 246
 fertilizer requirements 3 103
 fire susceptibility 2 196
 general account 2 44
 grading of planting stock 2 171
 in Czechoslovakia 1 39
 in Ukraine 4 98
 insects 3 168, 253, 4 59, 253, 5 33,
 64, 201
 interception 2 169, 4 32, 88
 mycorrhiza 1 76, 4 14
 natural regeneration 2 171, 4 163
 pioneer on *Calluna* sites 5 30
 prehistory 2 182, 3 97
 provenance tests 1 161
 seasonal growth period 3 209
 seed extraction 3 125
 selection cutting 1 280
 site quality 2 339, 4 197
 snow regime and density of stock-
 ing 4 215, 5 32
 thinning 1 166
 tree classes 1 280
 windthrow 2 174, 5 33
 wood
 anatomy 2 46
 durability of sleepers 4 178
 pole specifications 5 192
 preservative treatment 2 231-2,
 3 324, 4 276-9, 5 46
 strength tests 2 154
 yield and volume tables 2 174,
 250
 — var. *latifolia* 5 13, 97, 168, 240,
 281
P. corsicana see *P. nigra* var. *calabrica*
P. coulteri 2 196, 293, 3 29, 5 270
P. densiflora
 early flowering 1 245
 fire susceptibility 2 196
 insects 2 195, 4 59, 131, 5 202
 mycorrhiza 2 338
 seed testing 1 120
 soil conservation 1 292
 vegetative propagation 2 297
 wood
 analysis 1 285
 cellulose extraction 3 230
Pinus densiflora—cont.
 wood
 pulp 1 285, 2 149, 4 39
P. douglasiana sp. nov. 5 243
P. durangensis sp. nov. 5 21
P. echinata (see also *Pinus* 'southern')
 afforestation of strip-mined land
 3 215
 bark fauna 3 295
 diseases 2 246, 3 84, 171, 4 247
 establishment of hardwood 5 28
 drought resistance 1 155, 156
 fertilizer treatment 3 286, 5 111
 general account 3 353
 Georgia seed law 3 302
 growth, root and shoot 1 252
 growth rings 1 272
 in Nyasaland 5 31
 increment, effect of
 fire 5 198, 242
 litter removal 5 67
 rainfall 1 272, 5 247
 soil type 5 209
 stand density 5 289
 insects 2 29, 41, 123, 3 166, 4 130,
 192
 keys 5 104
 management 1 92, 166, 2 92, 5 242
 management statistics 1 197
 mycorrhiza 5 164
 natural regeneration 1 254, 2 138,
 295, 3 122, 211
 nutrient requirements 2 264
 on old fields in Pennsylvania 3 34
 polyembryony 3 290
 pruning 4 29
 response to release 1 269
 root exposure, effect of 4 102
 second-growth stands 1 164, 165
 seed
 extraction 3 125
 fall 2 288
 quality 5 29
 storage 1 161, 2 132
 treatment 4 164
 seedbed treatment 2 209
 seedling development and growth
 1 269, 2 134, 212, 3 123, 5 165
 site requirements 2 171, 3 41, 119,
 298
 soil under 3 196 (2), 5 88
 thinning 1 92, 166, 3 130, 4 104
 transpiration 1 156
 volume tables 1 298, 3 349
 wood
 anatomy 2 46
 pole specifications 5 192
 pulp 2 58
 seasoning 4 180
 specific gravity 1 173, 174
 steaming 2 220
 strength properties 1 174
P. edulis see *P. cembroides* var. *edulis*
P. excelsa (*P. wallichiana*) 1 113, 115,
 128, 209, 3 282, 4 50, 98, 253, 5 113
P. flexilis (*P. strobfiformis*)
 direct sowing 1 257
 disease 2 285
 fire susceptibility 2 196
 insects 3 167, 4 59, 252
 on volcanic deposits 3 205

SPECIES INDEX

- Pinus flexilis*—cont.
 tree height 2 161
 vegetative propagation 4 89
 volume table 1 299
 water requirements 2 32
- P. gerardiana* 2 288
- P. glabra* 2 181
- P. greggii* 5 169
- P. griffithii* see *P. excelsa*
- P. halepensis*
 afforestation
 anti-erosion 1 39, 313, 4 88
 sand dunes 2 91
 anatomy 5 166
 direct sowing 1 313
 disease 3 335
 in Algeria 1 226
 in Cyprus 3 205
 in Nyasaland 5 31
 nursery technique 2 212
 oleo-resin 3 154
 planting methods 1 39
 resin tapping 1 50, 51
 snow breakage 1 312
 volume tables 4 195 (2)
 wood
 preservative treatment 5 124
 strength properties 1 314
- var. *brutia* 5 132
- P. hartwegii* see *P. montezumae* var. *h.*
- P. herrerae* sp. nov. 2 201
- P. holfordiana* 4 227
- P. insignis* see *P. radiata*
- P. insularis* see *P. khasya*
- P. jeffreyi*
 diseases 3 340, 4 247
 distribution 3 32
 embryo size 5 15
 fire resistance 2 196
 identification 3 35
 insects 2 196, 3 168, 4 193, 250, 252, 253
 polyembryony 3 29
 seasonal growth period 3 209
 turpentine 5 271
- Pinus khasya* (*P. insularis*)
 balsam 1 50
 in Burma 3 291
 in India 1 109
 in Nyasaland 5 31
 in Philippines 2 206
 resin yield 1 102
 turpentine 4 50
 wood
 fibre length 1 271, 272
 pulp 2 308
- P. koraiensis*
 disease 2 285
 insects 2 122
 mycorrhiza 4 214
 vegetative propagation 4 89
 wood
 chemical composition 3 221
 chemical utilization 3 67
- P. lambertiana*
 diseases 2 285, 3 160, 4 190, 247
 embryo size 5 15
 fire susceptibility 2 196
 in Oregon 5 20
 insects 2 196, 3 167, 4 252, 5 202
- Pinus lambertiana*—cont.
 seasonal growth period 3 209
 vegetative propagation 4 89, 5 13
 wood
 aircraft grade 5 115
 anatomy 5 34
 properties and uses 2 45
- P. laricio* see *P. nigra* var. *calabrica*
- P. laricio* var. *austriaca* see *P. nigra* var. *a.*
- P. leiophylla* 1 299, 2 170, 5 21, 31, 270
- var. *chihuahuana* 5 270
- P. longifolia* (*P. roxburghii*)
 diseases 4 566
 fire protection 2 70
 general account 5 113
 growth 1 171, 172
 healing of scars 2 319
 in Nyasaland 5 31
 mycorrhiza 1 209–10
 natural regeneration 2 90, 207
 nurse to Sal 1 162
 pruning 5 256
 resin tapping 1 101–2
 seed treatment 1 209
 soils under 1 128
 survival, factors affecting 5 179
 tar products 4 122
 thinning 2 299
 turpentine 4 50
 wood
 analysis 3 150
 growth rings 1 171–2
 improved wood 5 187
 preservative treatment 1 180, 2 63, 3 231
 pulp 5 44
 seasoning 4 118
 spiral grain 1 272, 273, 5 181
 strength properties 2 265
- P. lumholtzii* 5 21
- P. maritima* see *P. pinaster*
- P. massoniana* 1 112–13, 114, 208, 3 83, 300, 345, 5 104
- P. merkusii*
 balsam 1 50
 in Nyasaland 5 31
 in Sumatra 3 303
 resin, turpentine etc. 4 50, 183
 wood
 fibre length 1 271–2
 pulp 1 314, 2 308
- P. monophylla* see *P. cembroides* var. *m.*
- P. montana* see *P. mugo*
- P. montezumae*
 disease 3 76
 fire susceptibility 2 196
 general account 5 21, 29, 104, 270
- var. *hartwegii* 5 270
- var. *lindleyi* 5 21
- var. *rudis* 5 21
- P. monticola*
 branch and knot development 1 95
 controlled burning 1 187
 direct sowing 1 257 (2), 258, 2 132, 5 110
 disease 1 239, 241, 295, 2 20 (2), 120, 285, 3 335, 4 246, 247, 5 277
 fire susceptibility 2 196
- Pinus monticola*—cont.
 general account 2 44
 insects 2 22 (2), 3 167, 4 252, 5 201
 management 3 161, 4 99, 5 145
 mensuration 3 258
 natural regeneration, effect of
 grazing 5 140
 planting season 2 32
 polyembryony 3 29
 prehistory 2 182, 3 97
 seed germination 2 295
 site requirements 2 25
 stocking density 2 252
 vegetative propagation 5 13
 wood
 aircraft timber 5 115, 214
 anatomy 5 34
 grading 2 45, 55
 prevention of sap-stain 1 181
 properties and uses 2 45, 4 169
 pulp 3 60
- P. mugo* (*P. montana*)
 disease 2 123, 136
 effect of zinc 1 18
 erect forms 1 85
 insects 2 195, 3 253, 5 202
 mycorrhiza 1 130
 nurse crop 1 163
 pioneer on *Calluna* sites 5 30
 prehistory 4 82
 wood
 oil 3 154
 phenol constituents of heart-wood 5 258
- var. *mughus* 5 202, 277
- var. *rostrata* 1 75, 150
- var. *uncinata* see *P. m.* var. *rostrata*
- P. muricata*
 afforestation of sand-dunes 2 69
 fire susceptibility 2 196
 in Australia 2 263
 in California 2 290
 in N. Zealand 1 33, 2 264, 3 297
 in Nyasaland 5 31
 polyembryony 3 29
 varieties 3 115
- P. murrayana* see *P. contorta* var. *latifolia*
- P. nigra* s.l.
 afforestation of sand-dunes 5 89
 disease 2 245, 3 75, 160, 4 55, 5 138, 277
 increment 3 174
 insects 3 253 (2), 4 59, 253
 management 1 253
 natural regeneration in N.Z. 3 297
 resin 5 270
 resistance to
 drought 2 292
 salt spray injury 2 118
 soils under 3 196
 sowing 2 338
 thinning 1 253
 transplanting 3 46
 turpentine 1 291
 water régime 2 12
 wood
 cleavage strength 4 232
 phenol constituents 5 258
 preservative treatment 2 646

SPECIES INDEX

Pinus nigra s.l.—cont.

— var. *austriaca* (*P. laricio* var.

a.)

cytology 5 16

damping off 1 104

diseases 2 123, 136, 195, 3 339

fire susceptibility 2 196

in Denmark 5 174

injury from salt spray 2 191

insects 2 30, 195, 4 133, 5 202

needle composition 1 145

pollen germination 1 262

resin tapping 1 501

root system 5 109

seed testing 1 121, 161

wood

durability 1 278

— var. *calabrica* (*P. n.* var. *corsicana*, *P. n.* var. *poiretiana*, *P. laricio*)

afforestation of shifting sands 5 254

coppicing 3 289

cytology 2 124

diseases 3 335, 5 60

fire susceptibility 2 196

frost injury 4 53, 5 197

germination 4 102

in Australia 2 263

in Belgium 1 150

in Cyprus 3 205

in Denmark 5 250

in N. Zealand 2 264

in Tennessee Valley 5 104

insects 3 84

mycorrhiza 4 14

pioneer on *Calluna* sites 5 30

resin tapping 1 50

wood

bending 2 172

blue stain 1 175

durability 1 278

preservative treatment 2 64

properties and uses 2 44

— var. *poiretiana* see *P. n.* var. *calabrica*

P. occidentalis 1 265, 2 111, 112, 3 345, 4 177, 5 68

P. oocarpa 2 201

Pinus palustris (see also *Pinus 'southern'*)

damping off 2 92, 3 340, 4 248

direct sowing 2 38

diseases 1 242, 2 92, 246, 3 75, 4 247, 5 60

effects of burning and grazing 1 159, 229

effects and use of prescribed burning 1 84, 229, 2 34, 4 54

epicormics 5 167

fertilizer requirements 3 103

in Jamaica 1 113

in Nyasaland 5 31

in the Tennessee Valley 5 104

increment, factors affecting 1 91, 210, 272, 4 125, 246

injury from

frost 5 136

hail 3 335

ice 4 245

insects 2 41, 3 253

Pinus palustris—cont.

litter 5 88

management 2 31, 216

moisture requirements 1 122–3, 156

natural regeneration 1 91, 2 33, 3 300, 5 26

needles, utilization 2 236

polyembryony 3 290

pruning 5 33

pinewood production costs 5 69

resin production 3 154, 332, 4 122, 5 131

resin yield 1 122–3, 211, 4 122

root competition 1 82, 91

seed

extraction 1 256, 3 125

law 3 302

storage 1 122–3, 156, 159, 210, 2 132

viability 3 213

seedling development and growth 1 82, 91, 122–3, 156, 159, 2 134, 212, 4 104

site requirements 1 28

soils under 1 229

thinning 3 305

wood

durability 3 137

fireproofing 1 288

growth range 1 272

liquid absorption 1 288

phenolic constituents of heart-wood 5 258

pole specifications 5 192

preservative treatment 3 325

seasoning 4 180

specific gravity 1 173–4

tannin 5 193

termite attack 3 61

P. parryana see *P. cembroides* var. *p.*

P. parviflora 2 285, 4 89

P. patula

afforestation in Mexico 5 29

cone-bearing by young trees 1 210

fire susceptibility 2 196

in Nyasaland 5 31

in S. Africa 1 165

in Tanganyika 3 207

increment 2 89, 170

and density 4 28

insects 3 343

management 1 165–6

mycorrhiza 1 209–10

natural regeneration 2 89

thinning 1 165

wood

analysis 3 150

shrinkage 2 301, 3 63

strength properties 2 50, 90

P. peuce 1 148, 2 285, 3 51, 4 89, 217

P. pinaster (*P. maritima*)

afforestation of sand-dunes 2 69, 4 88, 215, 5 89

cytology 4 92

diseases 5 60

fertilizer treatment 1 132

in Nyasaland 5 31

in S. Africa 1 165–6

in W. Australia 1 132, 265, 3 27

Pinus pinaster—cont.

increment [2 76

factors affecting 1 29, 132, 314, rate 2 89

insects 2 23, 92

management in France 4 148, 213

nutrient requirements 1 29, 132, 314

polyembryony 3 29

resin tapping 1 50–1, 4 122

taper 4 195

thinning 1 165

wood

analysis 3 150

calorific value 2 49

durability 1 278

pulp 5 265

strength properties 2 90

sugars and ethyl alcohol 4 182

P. pinea 1 39, 3 68, 74, 205, 240, 339, 4 17

P. ponderosa

damping off 2 136, 3 246, 4 55

density of stocking 3 87

direct sowing 1 25 (3), 258, 2 132, 5 110

diseases 2 18, 145, 3 340 (2), 4 55, 56, 246, 247, 5 138, 198

distribution 1 54, 3 32, 175, 4 94, 157

fire resistance 2 196

flower and cone production 1 245, 3 107

growth hormones 3 107

identification 3 35

in Australia 2 263

in N. Zealand 1 33

in Russia 1 255, 4 98

increment 1 252, 267, 269, 270, 2 139, 3 119, 174, 5 175, 206

rate 2 250, 292

insects 1 243, 2 122, 123, 196, 287, 3 167, 168, 253, 4 59, 193, 250, 252, 253, 255, 5 141, 202

logging injury 2 23

logging practice 4 99

longevity 2 205, 3 120

management 1 269 (2), 280, 2 138, 205, 3 281, 305, 4 99 (2), 131

measurement 3 258

mistletoe 4 55

moisture requirements 2 32, 3 335

mortality 1 140, 252–3

multiple seedlings 2 288

mycorrhiza 1 77, 2 338

natural regeneration 3 42, 4 100, 160

needles

droop 1 240

frost resistance 1 133–4

palaeoecology 1 224

phenology 3 209

plantation survival rate 2 32

planting

methods 3 44

stock 2 171

poisoning 1 93

provenance 3 202, 4 90

pruning 1 267, 270

races 2 116

response to release 1 269 (2)

SPECIES INDEX

Pinus ponderosa—cont.
 seasonal growth period 3 209
 seed
 extraction 5 252
 germination 2 295, 3 246, 4 25
 maturity 2 37
 origin 3 202
 treatment 1 256, 2 171
 viability 3 244
 seedling growth 2 25
 sowing 2 338
 stump burning 1 266
 sulphur dioxide, effect of 1 243,
 315, 2 258
 thinning 1 92, 267 (2), 2 43, 299
 tree classes 1 158
 vegetative propagation 2 293
 volume tables 1 299
 wood
 anatomy 2 46
 defects 3 305, 4 36
 effect of chemicals on 1 175
 equilibrium moisture content
 3 310
 grading 2 55, 3 330
 insect killed timber 3 167
 preservative treatment 2 152,
 231, 232
 termite test 3 322
 yield tables 1 54, 299
 — var. *arizonica* 1 299, 2 196, 5
 169, 270
P. pseudostrobus 4 172
P. pumila 2 24
P. pungens 2 123, 5 89, 138
P. quadrifolia see *P. cembroides* var.
parryana
P. radiata (*P. insignis*)
 afforestation
 in Haiti 1 265
 in N. Zealand 1 33, 4 166, 5 214
 in Spain 5 254
 of sand-dunes 2 69
 die-back 1 6, 3 258, 4 246, 5 196
 diseases 2 92, 4 189, 5 176
 distortion in internodes 1 6, 21
 fertilizer treatment 2 339, 3 258,
 4 124, 224, 5 89
 fire susceptibility 2 196
 forest floor 2 186
 frost injury 5 197
 in Cyprus 3 205
 in Haiti 1 265
 in Nyasaland 5 31
 in Russia 1 299
 increment 2 33, 3 350, 4 24, 257
 insects 5 142, 176
 lean 2 205, 263
 management
 in S. Africa 1 165
 in W. Australia 5 109
 moisture requirements 2 263
 natural regeneration 2 264, 297,
 3 300, 4 157, 5 176
 needle composition 1 145
 needle fusion 5 137
 nutrient requirements 1 22, 29,
 145, 314, 2 284, 4 161, 224, 5
 274
 pruning 1 40, 165, 270, 2 263, 3
 258, 4 229, 246, 5 103

Pinus radiata—cont.
 root fusions 3 29
 rosetting, cause of 1 22
 seed
 collection and extraction 3 43
 treatment 1 161
 site
 preparation 1 18
 requirements 1 28
 spacing 5 103
 starch content 2 263
 thinning 1 165, 3 216, 5 103
 vegetative propagation 2 32, 263,
 3 25, 201, 4 15, 5 14, 92, 175
 watering 1 208
 wood
 analysis 3 150
 bending tests 2 172, 3 52
 fire-hazard indicators 1 316
 manufacture of explosives 4 242
 moisture content 3 220
 properties 1 93, 2 45
 pulp 1 7
 quality and rate of growth 5 182
 strength properties 1 42, 2 90,
 265
 thinnings, utilization of 2 90
 uses 3 307, 5 40, 185
 yield tables 4 196
 — f. *binata* 3 115
 — f. *guadalupensis* 3 115
P. resinosa
 afforestation
 burns 3 129
 old fields 4 104
 sand-dunes 3 288
 cone production 4 226
 crown development 4 63
 damping off 2 174, 4 55 (2), 247,
 248, 5 61
 direct sowing 2 209
 diseases 1 143, 240, 2 20, 123, 3 75,
 160, 246, 4 59
 drought resistance 1 157
 ecology 5 18
 fertilizer requirements 1 263, 2 172
 fertilizer treatment 2 298, 3 104, 4
 87
 girdling 4 105
 identification 4 105, 5 104
 in mixture 4 100
 increment 3 119, 5 144
 factors affecting 2 32, 4 63, 5 25
 rate 3 350
 injury from
 arsenic 2 41
 browsing 4 21, 5 62
 crows 2 287
 salt spray 2 118, 191
 snow 2 284
 insects 1 243, 262, 2 91, 195, 3 75,
 4 130, 253, 5 202 (2), 246
 leaves, mineral content 2 115
 light requirements 1 75
 moisture requirements 1 157, 162,
 4 104
 multiple seedlings 2 288
 mycorrhiza 4 87
 needle area 1 127
 nutrient requirements 1 156, 3 158
 phenology 3 208

Pinus resinosa—cont.
 photoperiodism 1 228
 plantation survival 3 212, 4 104
 planting methods 4 166
 planting stock 1 258, 313, 2 170,
 4 166, 227
 pollen storage 2 264, 3 27, 110
 pruning 1 267, 2 139, 4 63
 root system 3 113, 4 87, 92, 218,
 5 25
 seasonal growth 3 209, 5 14, 92
 seed
 extraction 2 132 (2), 3 (125)
 germination 3 246
 maturity 4 25
 storage 1 210, 4 25, 26, 101
 treatment 2 171, 210
 seedlings
 development and survival 1 75,
 258, 263, 266
 growing season 5 165
 shelterbelts 3 217
 soil improver 3 196
 soil requirements 1 78, 2 293, 4 151
 soils under 2 186
 sowing 1 259
 spacing 1 89, 4 257
 stand density 5 146
 susceptibility to disease 2 20, 3
 75 (2)
 thinning 1 267, 268 (2), 4 104, 5
 255
 tolerance
 high temperature 2 292
 shade 5 108
 tree classification 5 108
 vegetative propagation 2 297
 water absorption 5 90
 watering 1 157, 2 296
 wood
 aircraft grade 5 113
 dying 5 59
 grading rules 2 240, 3 65, 153,
 329
 preservative treatment 2 172,
 3 324, 4 177, 178, 179
 pulp 1 184-5
 strength properties 1 275
 sulphite pulp 1 284
P. rigida
 afforestation for flood control 2
 283
 diseases 2 265, 4 190, 5 138
 epicormics 5 167
 identification 5 104
 in Russia 2 191, 4 98
 injury from
 browsing 4 58
 salt spray 2 118, 191
 insects 2 123, 265, 4 130, 253
 litter fauna 5 160
 management 2 85
 natural regeneration 4 163
 nutrient requirements 3 158
 planting methods 3 123, 4 104
 pruning 2 217, 299
 seed treatment 4 164
 volume tables 3 349
 wood
 durability 1 181
 effect of chemicals 2 304, 4 233

SPECIES INDEX

Pinus rigida—cont.

- wood
 - pole specifications 5 192
 - shingles 1 181
- *f. globosa*, *f. nov.* 2 201
- P. roxburghii* see *P. longifolia*
- P. sabiniana* 2 196, 3 29–30, 5 31, 271
- P. sibirica* see *P. cembra* var. *s.*
- P. 'southern'*
 - disease 3 84, 4 247
 - general account 2 183
 - logging costs 2 56
 - nutrient requirements 1 210, 2 264
 - pruning 4 105
 - resin products 4 50
 - seed storage 1 161, 2 210
- wood
 - fireproofing 4 240, 5 267
 - grading 2 240, 241
 - moisture content 3 310
 - poles 5 128
 - preservative treatment 2 230, 3 61, 232, 324, 325, 326, 4 176, 177, 178 (2), 238, 5 46 (2), 48
 - pulp production 1 46, 2 149, 5 44, 122, 265
 - pulpwood
 - measurement 3 173
 - recovery of turpentine 4 244
 - saw timber conversion tables 2 156
 - strength, effect of blue stain on 1 288, 3 54
 - termite tests 3 322
 - uses 3 152
 - volume tables 2 249

P. strobiformis see *P. flexilis*

P. strobus

- afforestation
 - old fields 4 104
 - sand-dunes 3 288
- compression wood, formation 3 313, 4 110
- cone
 - collection 1 256
 - production 4 226
- cross pollination 4 217
- cytology 2 124
- damping off 2 174
- deep cork formation 3 290
- direct sowing 2 209, 3 44, 4 102
- diseases 1 85, 241 (2), 294, 2 173, 285, 326, 3 160, 161 (3), 339, 4 189, 246, 247, 5 59, 60 (2), 103
- factors affecting susceptibility 2 20, 123, 3 75 (2) 339
- resistant strains 2 174, 285, 3 160, 248, 4 249, 5 140, 277
- distribution 2 217
- ecological effect of fire, 3 122
- ecology 5 18, 239
- fertilizer treatment 1 77, 132, 3 104
- fire susceptibility 2 196
- general account 4 105
- girdling 4 105
- identification 3 307, 5 92
- in Czechoslovakia 1 39
- in mixture 4 100
- in Russia 1 299, 4 98
- increment
 - charts 4 197

Pinus strobus—cont.

- factors affecting 1 159, 2 293, 3 174 (2), 4 258, 5 247
- rate 4 258, 5 144
- injury
 - browsing 4 21, 58
 - crows 2 287
 - drought 3 241, 334
 - salt spray 2 118, 191
 - snow 2 284
 - sunscauld 5 273
 - wind 1 127, 3 334
- insects 2 195, 3 212, 4 129 (2), 131, 253, 5 62 (3), 201, 202, 246
- interplanting of Laurel thickets 3 123, 303
- light requirements 1 75
- litter decomposition 1 16
- management 1 122
- moisture requirements 1 157, 3 241, 334, 4 258, 5 90, 247
- mycorrhiza 2 338, 3 103, 5 87, 111
- natural regeneration 1 159, 3 75
- needles
 - area 1 127
 - droop 1 240
 - mineral content 2 115, 4 86
- nutrient requirements 1 77, 4 186, 5 87, 111
- phloem 1 144
- photosynthesis 4 154
- planting methods 1 258
- planting stock 1 313
- pollen storage 2 264, 3 27, 110
- polyembryony 3 29
- pruning 1 313, 2 139 (2), 5 180
- release 5 112
- root system 4 92, 5 25
- seasonal growth 3 46, 5 14, 92
- seed
 - collection 1 256
 - extraction 1 89, 210, 3 125
 - germination 189, 161, 210, 4 102
 - storage 1 210, 2 37
 - testing 1 121, 3 125, 126, 4 25
 - weight 5 29
- seed-bed treatment 1 90
- seedlings
 - development and growth 1 75, 77, 2 204, 4 166, 5 165
 - multiple 2 288
 - shelterbelts 3 217
 - site requirements 2 171, 3 41
 - soil requirements 1 78, 2 172, 293, 4 287
 - soils under 2 186, 3 196, 4 151
 - sowing 1 259
 - spacing 4 131
 - stand density 5 146
 - thinning 1 313, 2 170, 4 104 (2)
- tolerance
 - high temperature 2 292
 - shade 5 108
- transpiration 1 81, 157, 5 164
- vegetative propagation 3 25 (2), 4 217
- defoliated cuttings 3 201
- natural layering 2 32
- with growth substances 1 90, 2 210, 297, 298, 3 25, 108, 4 16, 89, 156

Pinus strobus—cont.

- volume tables 1 298, 2 76, 3 172, 349, 5 287
- wood
 - aircraft grade 5 115
 - anatomy 1 144, 2 46, 5 34, 257
 - chemical composition 3 311
 - cost of lumber production 3 152
 - durability 1 278, 5 38
 - dyeing 5 59
 - grading 2 240 (2), 3 65, 153, 350
 - panelling 4 120
 - preservative treatment 3 323, 4 178, 5 125
 - properties 1 93
 - pulp production 2 57
 - quality of second-growth 2 305
 - seasoning 3 148
 - uses 1 93, 2 266
 - utilization of wolf-trees 3 305
- P. sylvestris*
 - afforestation
 - for flood control 2 283
 - heath and moorland 3 20
 - in Normandy 1 160
 - sand-dunes 3 288, 4 215, 5 89, 240
 - spoil mounds 4 27
 - altitudinal range 1 75, 3 292
 - artificial regeneration 1 256, 2 38, 3 123
 - assimilation and respiration 2 189
 - bark
 - chemical composition 1 145, 174, 3 23, 4 15 (2)
 - tannin extraction 5 129 (2)
 - breeding 1 22, 138, 2 16, 4 90, 5 93, 236
 - bud and shoot damage 3 70
 - bud pruning 1 167
 - chlorosis 1 87
 - Christmas trees 4 243
 - competition from Aspen 3 296
 - cone
 - disease 5 198
 - production 3 28
 - size and yield 2 37
 - crown development and stand density 4 63
 - crown form 1 245, 5 238
 - cytology 2 124
 - damping off 1 104, 4 55
 - defoliation, effects of 2 286
 - deformity 3 111
 - direct sowing 1 256, 2 20, 38, 3 118
 - disease 1 103, 238, 2 136, 3 75, 160, 335, 4 126, 190, 5 60, 138, 277
 - resistant forms 1 138, 252
 - susceptibility to 2 20
 - distribution 1 25, 146
 - drought resistance 1 162
 - eccentricity of stem growth 5 247
 - felling time studies 2 147
 - fertilizer
 - requirements 2 338, 3 104, 5 11
 - treatment 1 77, 90, 2 41, 298, 4 14
 - forms 1 150, 247, 4 15, 5 103, 165, 204, 234, 238
 - frost hardness 3 215

SPECIES INDEX

Pinus sylvestris—cont.
 growing season 4 14
 growth habit 1 236, 245, 5 175
 hybridization 5 236
 in Denmark 1 253
 in Iceland 2 35
 in Latvia 1 169, 4 136
 in mixtures 3 216, 4 100 (2)
 in Norway 1 162-3
 in Rumania 1 25
 in U.S.A. 4 104, 161, 5 104, 144
 increment 3 87, 119, 5 144
 diameter 4 135
 factors affecting 1 18, 21, 30, 77,
 234, 245, 3 174, 4 63, 186, 5
 144
 variation in rate 3 120, 5 206
 injury
 browsing 1 296, 4 21
 crows 2 287
 elks 1 296
 fire 2 196
 from understorey 2 68
 frost 4 53
 rabbit 5 128
 salt spray 2 191
 snow 2 284
 wind 4 186
 insect damage to windthrown
 timber 1 238-9, 278-80
 insects 1 85, 105, 141, 153, 154,
 243, 2 22-4, 123, 195 (3), 327
 (2), 329 (2), 330, 3 83, 165, 168
 (2), 256, 344, 4 59, 60, 130 (2),
 251-3, 5 202 (2), 245
 interception 2 9, 5 232
 light requirements 1 75
 litter
 decomposition 1 16, 5 232
 removal, effects of 5 12
 manual treatment 1 77, 3 212, 4
 151
 moisture requirements 1 162, 2
 292, 3 297
 mycorrhiza 1 129-31,, 2 11, 338,
 3 103, 4 14, 150, 214, 5 11, 160
 natural regeneration 1 32, 129,
 3 297, 4 162-3, 225
 natural vs. artificial stands 3 75,
 300, 4 161
 needles
 fibre 4 15
 fodder 5 194
 mineral contents 2 115, 5 234
 oil 5 135, 194
 resin ducts 4 17
 source of vitamin C 5 51, 270
 winter coloration 4 99
 nursery technique 5 178
 nutrient requirements 1 17, 90, 2
 281-2, 4 186, 5 159
 palaeoecology 4 82
 phenology 1 150
 phototropism 1 82
 pioneer on *Calluna* sites 5 30
 planting
 methods 1 21, 160, 162, 256,
 259, 5 178
 season 3 46
 stock 1 34, 2 39, 182
 pollen testing 1 137

Pinus sylvestris—cont.
 pollination 2 16, 3 107
 progeny tests 4 90, 5 93-5, 236
 provenance tests 1 22, 234, 3 109,
 4 135, 165
 pruning 1 269, 2 170, 3 47
 bud 1 167
 self 1 158, 252
 races 1 22, 85, 234, 236, 4 15, 91
 variation in timber properties
 3 202
 resin
 ducts in needles 4 17
 extraction from stumpwood 3
 68 (2), 154
 properties 5 270
 tapping 1 50 (2), 2 237-8, 4 122
 root development 1 22, 5 247
 root system 1 162, 4 162
 rot fungi, factors affecting in-
 festation 3 75
 seed
 age 4 102
 dormancy 4 26
 extraction 1 34, 5 252
 germination 5 253
 oil 4 50
 provenance tests 1 22, 234
 production 1 34
 size 2 37
 storage 5 177
 testing 1 87, 121, 161, 3 125
 viability 3 213, 302
 vitamin C content 5 252
 weight 1 36
 years 1 135
 shelterbelts 3 351
 silvicultural systems 1 30, 158, 4
 225, 5 27, 208
 site quality 1 124, 2 333
 slash disposal 4 151, 163
 soil cultivation, effects of 4 25, 5
 253
 soil requirements 1 25, 77, 129, 4
 151, 5 233
 soils under 1 19, 2 186 (2), 3 196
 sowing 1 160, 256
 species for underplanting 2 42
 stand form 1 105
 thinning 5 31
 transpiration 3 106
 tree classes 1 196
 turpentine oils 1 291
 uneven-aged stands 4 100
 valuation 5 290
 varieties 1 25
 vegetative propagation 1 136, 5 93
 volume tables 1 105, 4 62, 5 66
 water régime 2 12, 31
 wood
 aeroplane timber 1 282
 anatomy 4 233
 calorific value 2 49
 composition 2 221, 3 221
 durability 1 278, 3 222, 5 266
 dye penetration 5 59
 effect of chemicals 2 304
 elasticity 4 33
 fire resistance 2 304
 grading 1 174, 3 237, 330
 hardness 1 174, 273, 2 50

Pinus sylvestris—cont.
 wood
 heartwood, toxic content 5 184
 impregnation with sugars 5 258
 knots 2 47
 lignin, localization 5 183
 mining timbers 1 41, 101, 4 242,
 5 49, 182
 moisture content and strength
 1 42, 172
 prehistoric material 5 8
 preservative treatment 1 169,
 278, 2 62, 231, 3 63, 143, 4
 42, 117, 238, 5 46, 47, 124, 258
 effect on strength 5 182
 printers' blocks 4 169
 producer gas fuel 2 316, 4 44 (2),
 241
 properties 1 41, 168-9, 172
 variation with race 3 202
 pulp 2 57, 150
 sap stain 1 175, 277
 seasoning 1 169, 5 49, 124
 sleepers 5 266
 stain fungi 1 141, 175-6
 storage 4 173, 5 259
 strength properties 1 172, 3 135,
 4 232 (2), 5 36 (2) factors
 affecting 1 42, 2 50, 5 182
 stumpwood
 cleaving 3 315
 utilization 2 240, 5 185
 summerwood, percentage 1 273
 yield of sawn material 4 134
 yield tables 2 32, 77, 78
 — var. *monticola* 1 150
P. tabulaeformis 2 122
 — var. *yunnanensis* (*P. y.*) 4 98,
 5 139
P. taeda
 bark fauna 3 295
 cellulose production per acre 1 179
 decay, factors affecting 1 82, 95 3 73
 diseases 1 82, 242, 2 145, 173, 222,
 246, 4 247, 5 60
 drought resistance 1 156
 fertilizer treatment 5 89, 111
 fire
 effect on cull 3 73
 effect on taper 4 246
 growing season 1 252
 gully control 1 266
 identification 5 104
 in Mauritius 1 113
 in Nyasaland 5 31
 injury
 fire 3 73
 ice 4 245
 insects 2 41, 3 166, 254, 4 130, 192,
 251 (2)
 management statistics 1 107, 197
 moisture requirements 1 155
 mycorrhiza 1 209-10
 natural regeneration 2 138, 3 122,
 123, 211, 300
 needle disease 1 82, 2 173
 normal stocking 1 301, 2 163, 295,
 5 69
 nutrient requirements 2 264, 284,
 338, 4 134
 photosynthesis 5 90

SPECIES INDEX

Pinus taeda—cont.

- plantations, return from 1 107
- polyembryony 3 290
- progeny tests 4 90
- pruning 4 229
- pulpwood
 - production 1 283–4, 4 37, 5 69
 - sizes 1 298–9
- response to release 1 167
- second growth 1 164–5, 5 69
- seed
 - collection 3 302
 - origin 3 27, 4 91
 - quantity and weight 5 29
 - storage 1 161, 2 132
 - treatment 1 35, 4 164
- seedling growth and development 2 212, 3 40, 285, 5 165
- silvicultural systems 1 92, 166–7, 2 92, 3 41, 210, 4 224, 5 246 (2)
- site requirements 1 28, 5 209
- spacing 4 27
- stand density and height growth 5 289
- succession 2 289, 5 242
- thinning 1 92, 166, 2 89, 3 130
- transpiration 1 156, 5 164
- volume tables 1 281, 299 (2), 2 92, 174
- wood
 - durability 2 62, 3 62
 - fibre length 1 273, 3 49
 - liquid absorption 1 288, 5 90
 - mould, effect on strength 4 171
 - pole specification 5 192
 - preservative treatment 3 325
 - pulp production 1 179, 315, 258, 4 39
 - pulp quality 2 309
 - seasoning 1 286, 3 148
 - specific gravity 1 173–4, 274
 - of plantation-grown wood 2 90
 - strength properties 1 174
 - yield 1 179, 4 259
- P. taiwanensis* 3 83
- P. teocote* 1 209–10, 4 33, 171, 5 21, 31, 270
- P. thunbergii* 1 209, 242, 245, 2 149, 3 29, 345, 4 59, 161
- P. torreyana* 2 196, 3 29, 107
- P. uncinata* see *P. mugo* var. *rostrata*
- P. virginiana*
 - direct sowing 4 26
 - disease 4 247, 5 60
 - effect on infiltration 5 147
 - identification 5 104
 - insects 2 123, 4 251
 - mycorrhiza 1 16, 2 338, 3 20, 5 11, 87
 - normal stocking 1 301, 2 163
 - nutrient requirements 1 16, 5 87
 - palaeoecology 3 97
- seed
 - treatment 4 164
 - quantity and weight 5 29
 - volume table 1 298, 3 349
- P. wallichiana* see *P. excelsa*
- P. yunnanensis* see *P. tabulaeformis* var. *y.*
- Piptadenia* spp. 4 223

- Piptadenia africana* 1 211, 5 186
- P. communis* 5 244
- P. pittieri* 1 41
- P. rigida* 1 273, 5 271
- Piscidia piscipula* 5 19
- Pistacia* sp. 2 239
- P. vera* 1 164
- Pithecolobium (Pithecellobium)* spp. 3 206, 4 158, 223, 5 19
- P. dulce* 4 121
- P. latum* 3 254
- P. racemosum* 5 113
- P. (Samanea) saman* 2 45, 3 206, 5 244
- P. zollerianum* 3 36
- Pittosporum* spp. 4 231
- P. ellipticum* 2 127
- P. eugenioides* 2 127
- Planera aquatica* 3 78
- Platanus* spp.
 - disease 2 20, 136, 193
 - hybrids 2 16, 5 16
 - in Great Britain 5 172
 - insects 4 194
- P. acerifolia*
 - decay after frost injury 5 274
 - diseases 2 193, 3 77, 158, 4 127, 5 281
 - durability of wood 3 62
 - in Rumania 1 255
 - insects 5 203
 - wind resistance 2 205
- P. kerrii* sp. nov. 2 27
- P. occidentalis*
 - afforestation of strip-mined land 4 218
 - charcoal from foliage 3 235
 - diseases 2 18, 193, 4 127
 - drought resistance 2 292
 - durability of wood 2 62
 - insects 5 203
 - volume tables 3 349
- P. orientalis* 4 60, 233
- P. racemosa* 4 60, 5 106
- Platymiscium trinitatis* 5 113
- P. ulei* 5 113
- Plectronia didyma* 2 199
- Pleurisanthes* 4 222
- Pleurothyrium* 4 223
- Podocarpaceae 2 66
- Podocarpus* 4 16, 5 98, 229 (2)
- P. allenii* sp. nov. 4 96
- P. alpinus* 3 206, 5 21
- P. amarus* 2 308
- P. blumei* 1 271
- P. dacrydioides* 3 290
- P. elatus* 3 297
- P. elongatus* 1 112, 2 89, 4 48, 248
- P. falcatus* 1 37
- P. ferrugineus* 2 34, 3 235
- P. gracilior* 2 199
- P. henkelii* 1 37
- P. imbricatus* 2 308
- P. latifolius* 1 37
- P. macrophyllus* var. *maki* 3 290
- P. marnii* 1 149
- P. milanjanus* 1 149, 2 199
- P. nerifolius* 2 8, 90, 123
- P. spicatus* 2 265, 3 235
- P. totara* 3 290
- P. urbanii* 3 290, 5 19

- Podocarpus vitiensis* 5 204
- Poeciloneuron indicum* 4 157
- Poinciana elata* 2 170
- Poinsettia pulcherrima* 5 195
- Polyalthia* spp. nov. 4 231
- P. fragrans* 4 168
- P. angustifolia* sp. nov. 5 244
- Polylepis* spp. nov. 5 102
- Polypetalae* spp. 5 106
- Polyscias ferruginea* 1 248
- P. kikuyensis* 5 178
- Pometia pinnata* 3 48, 308, 5 113
- Poncirus trifoliatus* 5 197
- Pongamia glabra* 5 9, 238
- Populus*
 - agri-silviculture 3 299
 - breeding 1 138–9, 236–7, 5 93, 249
 - classification 1 150
 - cytology 1 236–7, 2 338, 4 17
 - and speciation 5 166
 - fastigate varieties 5 247
 - fertilizer requirements 1 231–2
 - increment, factors affecting 2 39
 - injury
 - glaze ice 3 70, 4 53
 - lightning 2 284, 5 274
 - wind 2 205, 4 105
 - nomenclature 2 27
 - seed germination, viability etc. 3 107
 - soil improvers 4 12
 - soil requirements 1 5
 - vegetative propagation 1 38 (2), 2 39, 134, 191, 209, 4 15
- P.* spp.
 - branches as fodder 4 184
 - diseases 1 143, 246, 5 139, 199, 282
 - disease-resistant spp. 5 138, 139
 - girdling 4 105
 - insects 3 343, 347 (2), 348, 4 252, 5 140
 - mineral constituents 1 234
 - neolithic charcoal 2 181
 - root systems 1 144–5
- wood
 - absorption of resins 5 120 (2)
 - calorific value 2 49
 - plywood 2 148, 4 174
 - pulp 2 58
 - termite damage 2 265
- P.* hybrids
 - afforestation 5 31
 - artificial 1 240, 2 117, 263, 3 40, 86, 109, 4 16, 22, 156, 217, 5 93
 - cellulose content of wood 4 22, 156, 5 45 (2)
 - cytology 1 312–3
 - disease-resistant 5 138, 139
 - foliar morphology 4 93
 - hormone treatment 5 165
 - immunity to disease 4 89–90
 - increment 1 240, 4 22, 156, 5 45, 93
 - inhibiting effect of sod 2 209
 - natural 1 312, 2 16, 5 166
 - survival of cuttings 3 127
 - variation of clones 2 191, 4 22
 - vegetative propagation 1 81
- P. alba*
 - cellulose content 4 35
 - cytology 1 313

SPECIES INDEX

- Populus alba*—cont.
 diseases 2 121, 5 60
 ground-water relationships 2 12
 hybridization 3 30, 4 36, 91
 insects 5 204
P. aurea see *P. tremuloides* var. *a.*
P. balsamifera see *P. tacamahaca*
P. balsamifera var. *candicans* see *P. candicans*
 < *P. berolinensis* 1 140
 < *P. brabantica* 4 17, 191
 < *P. 'canadensis'* 1 141, 3 112, 201, 4 35, 88, 195
 — var. *eugenei* 3 201
 — var. *serotina* 4 17, 113, 136, 191 5 122
P. candicans 5 22
P. canescens 1 113, 313, 4 152, 165
P. deltoides
 afforestation
 eroded sites 3 129
 strip-mined land 3 215, 4 218
 general account 4 94
 in Mauritius 1 113
 in S. Africa 2 290 4 165
 insects 3 84
 moisture requirements 3 335, 5 33
 seedling survival 2 262, 3 126 (2)
 succession 4 53
 tree temperature 2 283
 vegetative propagation with
 growth substances 2 262
 wilding planting stock 3 126 (2)
 wood
 aircraft plywood 4 174
 durability 2 62, 153, 3 62 4 171
 — f. *pilosa* 5 23
 — var. *missouriensis* 4 17
 — var. *virginiana* 5 122, 123
P. eugenei see × *P. canadensis* var. *e.*
P. euphratica 1 298, 4 82
P. fastigiata see *P. nigra* var. *italica*
P. grandidentata
 cytology 1 313
 diseases 1 141, 2 194, 5 278
 distribution 5 168
 hybrids 4 36
 injury
 deer 4 21
 grouse 5 174
 palatability of leaves to millipedes 5 88
 scaling 5 143
 tree classification 5 108
 vegetative propagation 1 21
 wood
 chemical composition 4 34
 durability 2 62
 excelsior manufacture 5 43
 properties 1 172–3
P. italica see *P. nigra* var. *i.*
P. macdougalii 4 233
P. maximowiczii 2 226
P. nigra
 cambial growth 2 15
 cytology 4 17
 diseases 1 141, 2 20
 insects 5 65
 vegetative propagation 3 201, 5 235
 wood, cellulose content 4 35
- Populus nigra* var. *italica* 1 141, 3 201, 4 17, 233, 5 138, 221, 281
 < *P. petrowskyana* 1 140
P. pyramidalis see *P. nigra* var. *italica*
 < *P. rasumowskyana* 1 140
 × *P. robusta* 1 160, 3 211, 4 17, 113, 191
P. sargentii 3 44, 204, 4 157
P. serotina see *P. 'canadensis'* var. *s.*
P. simonii 3 112
P. tacamahaca (*P. balsamifera*)
 diseases 1 141, 4 246, 5 199
 distribution 4 94, 5 168, 240
 increment in U.S.S.R. 4 195
 nomenclature 4 220
 root system 3 112
 succession 4 19
 vegetative propagation 2 296
P. texana 3 44
P. tremula
 bark oil 3 68
 breeding 5 15
 colchicine treatment of seeds 3 27
 cytology 2 283, 4 156
 diseases 1 238, 5 204
 ecology in Norway 3 296
 fat content 4 109
 giant triploids 2 117 (3), 4 156
 heterophylly 4 93
 hybridization 2 117 (2), 3 30, 4 91, 5 236
 in Finland 2 182
 insects 4 132, 5 204
 litter decomposition 1 16, 5 232
 mycorrhiza 5 11
 photoperiodism 3 26, 39
 pollen viability 5 164
 sexual propagation 4 154
 vegetative propagation 1 261–2, 3 26, 201, 4 154, 5 93
 wood
 branchwood as fodder 4 184
 calorific value 2 49
 cellulose content 4 35, 5 94
 collapse 3 55
 delignification 4 233
 producer gas fuel 2 316, 4 44
 — var. *freyni* 2 198
 — var. *villosa* 3 201, 5 122
P. tremuloides
 diseases 1 141, 2 120, 121, 194, 4 246, 250, 5 278
 distribution 5 168, 240
 injury
 birds 4 250, 5 174
 deer 4 21–2, 250, 5 174
 elk 4 250
 insects 1 250, 2 21, 5 63
 leaves, chemical composition 2 115, 3 284
 mycorrhiza 1 76
 nutrition 1 251–2
 scaling 5 143
 seasonal growth 3 209
 soil conservation 5 13
 succession 3 205, 4 19, 5 27, 28
 tree classification 5 108
 vegetative propagation 1 21
 water content of trees 2 17, 81
- Populus tremuloides*—cont.
 wood
 aircraft plywood 4 174
 excelsior manufacture 5 43
 properties and uses 1 172–3
 pulp production 1 284, 2 57, 3 60, 5 45, 122, 265
 — var. *aurea* 1 76, 4 224, 5 28, 235, 281
P. trichocarpa 4 246, 5 168, 172
 < *P. vernirubens* 1 136, 5 138
P. villosa see *P. tremula* var. *v.*
P. yunnanensis 2 296
Poraqueiba 4 222
Portulacaria afra 5 55
Pouteria ferruginea 2 126
Pradosia spp. nov. 4 159
Premna spp. nov. 4 231
Prioria copaifera 1 41 [255
Prosopis spp. 2 264, 4 21, 106, 5 30,
P. chilensis 1 148
P. glandulosa 5 54 (2)
P. juliflora 2 137, 170, 339, 4 23, 5 19, 54
P. spicigera 1 313, 4 83
P. velutina 2 215, 291, 4 216, 5 79
Prunus spp.
 disease 2 119
 hedge plants 5 112
 hybrids 3 109
 injury from oil-spray 5 136
 insects 4 59, 193
 new species from Burma 3 292
P. alleghaniensis var. *davisii* 3 126
P. americana 3 126, 4 25, 5 11, 197
P. amygdalus 5 130
P. armeniaca 2 36, 5 200
P. avium 2 181, 3 284, 5 60, 197
P. besseyi 1 155
P. cerasifera 5 200
 — var. *divaricata* 3 36
P. cerasus 2 36
P. domestica 3 36, 181
P. fruticosa 3 157
P. laurocerasus 5 164, 167
P. mahaleb 1 136
P. nana 3 157
P. padus 1 76, 2 42, 207, 5 166, 181, 232
P. pennsylvanica 3 211, 4 34, 5 11, 27
P. puddum 5 181
P. salicifolia see *P. serotina* var. *s.*
P. serotina
 afforestation 5 31
 diseases 5 278, 279
 ecology 3 211, 5 239
 general account 4 105
 graded planting stock 4 127
 injury
 glaze ice 2 284
 porcupine 3 251
 insects 3 254
 leaves, chemical composition 2 115, 3 284
 natural durability 3 312, 5 254
 sprout control 5 80
 volume tables 3 349 (2)
 — var. *salicifolia* 5 105
P. spinosa 2 36, 181
P. virginiana 4 25, 59, 5 11, 103
Pseudocedrela kotschyi 4 197

SPECIES INDEX

- Pseudolarix* 4 17
Pseudopanax crassifolium 2 127
Pseudosmodium 3 36
Pseudotsuga 5 95
P. douglasii see *P. taxifolia*
P. macrocarpa 2 121
P. mucronata see *P. taxifolia*
P. taxifolia (*P. douglasii*, *P. mucronata*)
 afforestation of water catchments 4 259
 Christmas trees 3 154
 cutting practices 2 206 (2), 3 352
 damping off 1 104, 2 136, 4 55
 decay 1 166, 5 61
 dendrochronology 3 86, 4 134
 direct sowing 1 257-8, 2 338, 4 26
 diseases 1 69-71, 85, 239, 2 18, 19, 20, 142, 194, 285, 3 76, 137 (2), 146, 147, 323, 325, 340, 4 55, 56, 246, 5 60, 137, 138, 139, 199 (2), 278
 distribution 5 168, 169
 embryogeny 5 237
 fertilizer treatment 1 132 (2), 5 111
 fire exclusion, effect on regeneration 1 32, 5 32
 girdling 4 168
 growth habit, factors affecting 1 23-4, 139
 in Australia 2 263
 in Denmark 5 174, 250
 in Great Britain 5 171
 in Mexico 5 21
 in N. Zealand 1 33, 2 42, 264, 3 297, 4 166
 in Norway 5 31
 in U.S.S.R. 1 254-5, 4 98
 increment 2 77, 331, 3 261, 350
 estimation 4 260
 factors affecting 3 174
 measurement 5 67
 injury
 all causes 5 26
 fire 2 196, 4 136
 frost 4 53, 54, 5 197 (2)
 ice 5 136
 logging 2 148, 4 136
 rodent 4 128
 SO₂ 1 243-4, 315, 2 258
 wind 3 250
 insects 1 239, 2 23 (4), 74, 91, 160, 248, 3 168, 4 192, 252, 5 65, 89, 107, 201
 knot formation 1 244-5
 litter 2 186, 4 151
 longevity 5 109
 mixtures 4 100
 moisture requirements 2 32
 morphology 5 166
 multiple seedlings 2 288
 mycorrhiza 5 111
 natural regeneration
 factors affecting 1 32, 2 25, 169, 4 225, 5 140
 in N. Zealand 2 264, 3 297
 means of promoting 4 100 (2), 102
 needles, frost resistance 1 133-4
 nutrient requirements 3 71, 5 26
 palaeoecology 3 97
- Pseudotsuga taxifolia*—cont.
 parthenocarp 4 155
 planting
 costs 5 210
 methods 5 177
 stock 2 171
 pruning 1 270, 2 216, 3 131, 4 105
 costs 5 33
 natural 2 294
 races and provenance 1 139, 236, 5 67, 174
 rotation 4 138
 second-growth stands, 3 88
 seed
 germination 2 169, 295, 5 296
 production 3 298, 4 101, 164, 5 14
 provenance 1 139, 236, testing 1 35, 87, 121, 3 125, 126
 seed-trees
 mortality 2 294
 number 2 169
 silvicultural systems 4 221, 5 68
 slash decay 1 266
 stumpage computation 4 260
 succession 3 115, 205, 5 30, 32
 Swiss leaf-cast disease 1 69-71, 142
 taper tables 3 258
 vegetative propagation 1 261-2, 2 135-6, 5 13-14, 14
 wood
 aircraft timber 4 237, 5 113, 214
 anatomy 3 308
 bridging timbers 2 68, 321, 4 185
 building standards 5 58 (3)
 compression 3 317
 cork production 3 237, 4 183, 243, 5 51 193
 defects 2 305, 3 55
 deterioration of fire-killed wood 5 116, 260
 durability 1 278, 2 52, 153, 3 137, 222, 4 178
 effect of chemicals on 1 175, 2 304, 4 233, 5 119
 fire resistance 2 304
 fireproofing 5 267
 grading 3 237, 329, 330, 4 182 (2)
 heat conductivity 5 35
 identification 2 301
 laminated beams 5 188
 lignin 2 51
 manhole covers 4 242
 mining timbers 4 48
 plywood 3 153, 4 113
 poles 5 128, 192
 preservative treatment 2 229, 231 (2), 232 (2), 3 146, 147, 323, 325, 4 176-9, 239, 5 46
 properties 2 48, 140, 5 36 (2), 113
 pulp production 1 98, 284, 2 149, 226, 309, 3 60, 230, 4 39, 40, 5 265
 resin-impregnated wood 4 113
 sapstain 1 181-2
 sawmill waste 5 56
 sawmilling 3 358, 4 135, 236, 5 121
- Pseudotsuga taxifolia*—cont.
 wood
 seasoning 1 100, 182-3, 4 180, 5 49, 124, 126
 strength 2 140, 5 115, 258
 use of timber connectors 4 245
 yield tables 1 300, 4 102
 — var. *caesia* 1 236
 — var. *glauca* 2 121
 — var. *viridis* 1 236, 5 174
Psidium spp. nov. 4 158
P. cattleianum var. *lucidum* 1 148
Psychotria hundelii sp. nov. 5 173
Pterocarpus sp. 3 281
P. angolensis (*P. bussei*) 1 90, 209, 210, 226, 2 90, 4 170, 5 39
P. blancoi 3 308, 5 113
P. bussei see *P. angolensis*
P. dalbergioides (*P. indicus*) 1 209, 2 39, 3 214, 4 168, 216
P. indicus see *P. dalbergioides*
P. marsupium 1 250, 313, 2 170, 4 27, 5 113, 181, 195
P. santalinus 2 170, 4 35, 5 195
P. soyauxii 1 94
P. tinctorius 3 280
P. vidalianus 1 249
Pterocarya caucasica 4 161
P. sorbifolia 4 161
Pterocymbium spp. 4 231
Pterogyne sp. 4 106
Pterospermum acerifolium 2 263
P. suberifolium 2 199
Ptychopyxis 4 21
Punica granatum 2 296
Pycnanthus sp. 2 203
P. kombo 1 46, 168, 5 38
Pygeum spp. nov. 2 292, 4 96
P. africanum 5 178
P. mooneyi 5 105
Pyrus spp. 3 83, 109, 4 193
P. communis 1 136, 2 36
P. lanata 5 278
P. malus see *Malus pumila*
- Quercus*
 anatomy and taxonomy 1 170, 4 21, 32 (2)
 biochemical properties of leaf 2 17
 cytology 3 28
 dormant buds 2 24
 hybridization 1 138, 3 109, 4 17, 5 16
Quercus spp.
 in British Honduras 5 10
 in Central America 5 106
 in Costa Rica 5 158
 in N. Mexico 4 97
 in Portugal 3 203
 in Siam 5 22
 insects
 China 1 155
 Yugoslavia 1 152
 Rumania 1 154
 management (Rumania) 1 155
 planting stock (Russia) 1 248
 root development (Palestine) 1 23
 seasonal growth on steppe 4 84
 shelterbelts (Russia) 2 43
 termite injury (N. Zealand) 2 265

Quercus spp. (N. American)
afforestation of strip-mined land 3 215
butt rot in coppice stands 1 243, 312, 5 59
classification 1 170
cordwood production costs 1 281
diseases 1 143, 243, 2 194, 245, 326, 3 76, 163, 4 57, 127, 5 61, 278, 282
external symptoms of decay 2 285
foliage area 1 245
grafting 4 217
hybrids (natural) 2 16, 5 19, 105
injury
 deer 4 21-2
 fire 1 188, 3 245
 oil spray 2 247
insects 1 153, 3 347, 4 133, 253
key (Texan spp.) 3 37
natural regeneration 2 171
nutrient requirements 1 252, 3 21
palaeoecology 3 97, 4 11, 5 8
poisoning and girdling 5 78-9, 112
seasonal growth 3 41
seed stratification 2 283
sprouting 1 312
succession 5 242
susceptibility to lightning strike 2 284, 5 274
thinning 3 87
wood
 collapse 3 55
 converting factors for mixed cordwood 3 173, 349
 durability 3 312, 5 39
 flooring standard 3 237
 partial pyrolysis 5 126
 porosity of heartwood 4 33
 preservative treatment 5 189
 raised grain 5 262
 volume table (topwood) 3 259
Q. aata 5 158
Q. agrifolia 3 249, 4 57 (2), 5 279
Q. alba
 breeding 3 28
 direct sowing 2 38
 diseases 2 18, 3 78
 epicormic branching 2 171
 fertilization, effect on acorn production 5 252
 general account 5 31
 growth rings 1 272
 hybrids 5 19
 increment 5 67
 factors affecting 1 272, 3 260
 injury
 deer browsing 5 140
 frost 5 274
 rodents 4 58
 insects 4 133, 252
 log grading and scaling 2 161, 5 185
 mineral content of leaves 2 115, 3 284
 nutrient requirements 1 251-2
 protein content of acorns 5 234
 root distribution 4 92
 seed germination and respiration 1 237, 5 13

Quercus alba—cont.
 seedling growth 5 165
 soil under 3 196
 stump sprouts 1 243, 2 206, 5 59
 tannin content 5 130
 transpiration 5 164
 volume tables 1 298, 2 162, 249, 250, 3 172 (2), 4 58
 weeding 4 228
 wood
 anatomy 2 47, 5 257
 defects 2 53
 durability 2 62, 3 62, 5 259
 effects of chemicals on 1 175
 preservative treatment 2 231, 4 178
 shrinkage 1 173
 wooden tanks 5 119
Q. arizonica 3 222
 × *Q. asheana* 5 105
Q. borealis
 general account 5 31
 in Denmark 1 163
 in Sweden 5 249
 increment 3 119
 insects 5 63
 nutrition 1 251-2
 palatability of leaves to millipedes 5 88
 protein content of acorns 5 234
 range 4 223
 soil requirements 5 175
 soils under 1 230
 volume tables 2 162, 249, 3 259, 349
 — var. *maxima*
 diseases 3 78, 5 91
 epicormic branching 2 171
 fertilizer treatment 2 338, 4 151
 increment
 factors affecting 3 260
 seasonal 3 209
 injury
 deer browsing 5 140
 porcupine 3 251
 log grading 5 185
 mineral content of leaves 2 115, 3 284
 photosynthesis 5 90 [41
 plant survival, factors affecting 3
 range 4 223
 root system 4 92 (2), 5 17, 25
 seed germination and respiration 1 237, 4 102
 seedling growth 4 151, 5 165
 volume tables 1 298
 weeding 4 228
 wood
 durability 2 62, 3 62
 fireproofing 4 240
 lignin 2 303
 preservative treatment 2 231, 3 323, 324, 4 178 (2)
Q. borucasana 5 158
 × *Q. burnetensis* 5 105
Q. catesbaei see *Q. laevis*
Q. cerris 1 229, 3 78, 203, 4 18, 249
Q. chapmanii 3 78
Q. cinerea 1 82, 2 246, 5 193
Q. coccinea 3 78, 349, 4 127, 223, 5 59, 175

Quercus coccoifera
Q. copeyensis 5 158
 × *Q. cravenensis* 5 105
Q. dentata 5 197
Q. dilatata 2 207
Q. ellipsoidalis 4 223, 5 234
Q. emoryi 3 222, 5 246
Q. engeliana 1 262
Q. eugeniaefolia 5 158
Q. falcata see *Q. rubra*
Q. farnetto 3 203
 × *Q. filialis* 5 105
Q. gambelii 4 252, 5 246
Q. garryana 4 168, 246
Q. geminata see *Q. virginiana* var. *g.*
Q. glandulifera 2 309
Q. houstoniana 5 106
Q. ilex 1 226, 4 57, 233, 5 299
Q. ilicifolia 2 85, 3 131, 4 105, 5 174
Q. incana 2 207
Q. kelloggii 4 186, 245
Q. laevis 2 246, 4 191, 5 193
Q. lamellosa 2 59
Q. laurifolia 1 241, 2 246, 4 221
Q. lineata 2 59
Q. lobata 1 249
Q. lyrata 2 228, 4 127, 5 19, 183
Q. macrocalyx var. *tomentosa* 4 222
Q. macrocarpa
 breeding 3 28
 deer browsing 5 174
 disease 4 246
 drought resistance 2 292, 3 325, 5 197
 insects 1 152, 5 63, 245
 longevity 3 41
 protein content of acorns 5 234
 range and distribution 3 31, 204, 4 94, 223
 root systems 2 293
Q. margaretta see *Q. stellata* var. *margaretta*
Q. marilandica 2 91, 246, 3 60, 78, 4 23, 5 193
 × *Q. miczurinii* 4 17
Q. minima 3 78
Q. mirbeckii 1 49, 3 78
Q. mongolica 5 22
Q. montana
 calcium content of leaves 2 115
 climax forest in Kentucky 2 126
 insects 2 287
 nutrition 1 251-2
 photoperiodism 1 228
 pulp production 5 40
 relative growth of seedlings and sprouts 4 29
 root reaction while sprouting 1 81
 seed production 1 256, 5 248
 soils under 3 196
 specific gravity of wood 5 182
 stand structure and growth 5 144
 volume tables 1 298, 3 349
Q. myrtifolia 3 78
Q. nigra 2 246, 3 33, 4 191, 5 19
Q. nuttallii 4 223
Q. oglethorpensis 3 37, 206
Q. palustris
 durability of wood 3 62
 immunity to mildew 3 78, 4 57
 in Virginia 5 19

SPECIES INDEX

Quercus palustris—cont.

- soil requirements 5 175
- transplanting 4 103
- treatment for chlorosis 3 71
- volume tables 3 349
- Q. pedunculata* see *Q. robur*
- Q. petraea* see *Q. sessiliflora*
- Q. phellos* 2 246, 3 78, 5 19, 130
- Q. polycarpa* 3 117
- Q. polymorpha* 4 125–6
- Q. prinus* 5 193
- Q. pumila* 2 197, 3 78
- Q. robur* s.l.
 - assortment tables 1 192, 2 78
 - bark
 - calorific value 4 48
 - removal 4 50, 120
 - volume 2 162
 - bird life 5 244
 - direct sowing 1 34, 3 124, 4 101
 - diseases 1 104, 2 121, 3 78, 312
 - ecology and range in Switzerland 3 96, 4 81, 218
 - epicormic shooting 3 120
 - fat content 4 109
 - ground-water relationships 2 12
 - in Poland 3 296
 - increment
 - compared with *Q. sessiliflora* 5 287
 - diameter 4 135
 - of standards in coppice with standards 1 193, 230–1
 - radial 1 81
 - injury
 - deer 1 104
 - fumes 4 54
 - glaze ice 3 70, 4 53
 - hail 1 75
 - lightning 1 127
 - salt spray 3 71
 - insects 1 190–1, 238, 2 327, 3 84, 169
 - killing of water sprouts 5 255
 - litter
 - decomposition 1 76, 2 21, 5 232
 - production 2 188
 - moisture content and *Lycetus* attack 5 260
 - natural regeneration 2 34, 4 226
 - nursery practice 2 133
 - palaeoecology 2 181, 3 15, 5 8
 - planting vs. direct sowing 1 34
 - planting stock 1 34
 - progeny tests 5 236
 - root system 1 81, 144–5, 3 112
 - seed
 - germination 5 29
 - testing 3 125
 - treatment 3 27
 - silvicultural requirements 4 23
 - soil requirements 1 231, 5 175
 - starch depletion 1 43 (2), 280
 - thinning 4 167
 - underplanting Pine 2 42, 5 12
 - vegetative propagation 1 81
 - vitamin B in buds 3 199
- wood
 - ash analysis 5 129
 - charcoal production 5 127
 - chemical bending 4 115

Quercus robur s.l.—cont.

- wood
 - discoloration by steam 5 126
 - durability 1 278, 5 266
 - effect of chemicals on 2 304
 - fire resistance 2 304
 - fireproofing 2 312
 - flooring 3 311
 - hardness 5 50
 - hemicelluloses 1 175
 - locomotive fuel 4 244
 - moisture content and strength 1 42
 - pitprops 4 242, 5 191
 - producer-gas fuel 2 316, 4 47, 241
 - seasoning 3 148
 - strength 1 42, 5 182
 - tannin extraction 5 116, 192, 269
 - unsuitable for plywood 3 228
 - yield tables 1 32, 5 207
- Q. robur* s.s. (*Q. pedunculata*)
 - cytology 2 112
 - diseases 3 78, 5 60
 - frost-resistant strains 3 157, 335, 5 15
 - girdling 1 43–4, 280
 - hybridization with *Q. sessiliflora* 4 91
 - in Scotland 4 18
 - increment, factors affecting 2 214
 - insects (in Tasmania) 2 74
 - provenance tests 3 109, 110
 - seed production 1 34
 - vegetative propagation 1 136
- wood
 - anatomy 4 231
 - annual-ring structure 3 51
 - calorific value 2 49
 - cleavage strength 4 232
 - properties 5 35
 - shrinkage 1 173
 - var *praecox* 2 131, 3 208
 - var. *tardiflora* 3 208
- Q. rubra* (*Q. falcata*)
 - diseases 2 145, 246, 3 78
 - durability of wood 1 278
 - in Italy 3 175
 - nomenclature 1 248
 - photoperiodism 1 228
 - seed
 - germination 4 101, 5 29, 136
 - polyembryony 4 218
 - source of tannin 5 193
 - wind resistance 2 205
 - × *Q. rudkinii* 4 217
 - Q. semicarpifolia* 4 98, 5 139
 - Q. serrata* 3 78, 4 57
 - Q. sessiliflora* (*Q. petraea*)
 - cytology 2 16
 - hybridization 4 91
 - immunity to mildew 3 78
 - in Ireland 1 84
 - in Scotland 4 18
 - in Silesia 5 251
 - increment 5 287
 - litter decomposition 1 16
 - mixture with Beech 1 253
 - seed production 1 34
 - wood anatomy 4 231

Quercus sessiliflora—cont.

- wood
 - calorific value 2 49
 - character and properties 1 93
 - cleavage strength 4 232
 - f. *insecata* 4 20
 - Q. shumardii* 4 157, 223
 - Q. stellata* 3 78
 - var. *margaretta* 5 193
- Q. suber*
 - barking 1 270
 - bibliography 5 84
 - immunity to mildew 4 57
 - in Algeria 1 49–50, 226
 - in Americas 5 192
 - in California 3 153, 4 243
 - in Japan 5 215
 - in Portugal 5 22
 - in southern U.S. 4 243
 - insects 5 203
 - propagation 3 154
 - pruning 1 270
 - review of literature 3 237
 - rodent damage 2 247
 - stomatic activity after barking 5 235
- Q. turbinella* 2 69
- Q. utahensis* 3 222
- Q. variabilis* 5 197
- Q. velutina* 3 78, 349, 4 11, 121
- Q. virens* 3 78
- Q. virginiana* 2 25, 3 33, 78, 238, 5 173, 193
- var. *geminata* 3 78, 4 191, 5 193
- × *Q. wyssotskyi* 4 17
- Quinaceae 1 150
- Quillaja saponaria* 4 120
- Radermachera borii* sp. nov. 2 202
- Randia lundelliana* 5 173
- R. nilotica* 4 243
- R. taylori* 4 243
- Rapanea* spp. nov. 4 96, 5 244
- R. melanophleas* 1 37
- Raphia sudanica* 3 333
- Reevesia macrocarpa* 5 169
- R. tomentosa* sp. nov. 5 240
- Rehderodendron* spp. 3 115
- R. indochinensis* 5 169
- Reicheia* gen. nov. 3 117
- Reynosia septentrionalis* 5 192
- Rhabdodendron amazonicum* 5 106
- R. gardnerianum* 5 106
- Rhamnaceae* spp. 1 169, 248
- Rhamnella viitensis* 5 244
- Rhamnus* spp. 5 112
- R. alnifolia* 5 141
- R. cathartica* 2 181, 5 105
- R. frangula* 1 261–2, 5 105, 107, 138, 141
- R. lanceolata* 5 238
- R. palaestina* 5 199
- R. purshiana* 4 68, 243 (2), 5 52, 269
- Rhizophora* 3 32, 330
- R. apiculata* 1 281
- R. candelaria* 4 121
- R. conjugata* 1 30, 5 193
- R. mangle* 1 46, 2 125, 218, 3 137, 5 192, 193, 269
- R. mucronata* 1 30, 283, 5 97, 193

SPECIES INDEX

Rhodammia spp. 4 231
R. trinervia 2 89
Rhododendron maximum 3 307
Rhodomyrtus spp. nov. 4 20
Rhodosphaera rhodanthema 5 18
Rhoipteleaceae 4 32
Rhus 2 140
Rhus spp. 3 83, 5 129 (2)
R. copallina 5 193
R. cotinus 2 36
R. kanaka sp. nov. 4 158
R. lancea 5 30
R. oxycantha 5 10
R. toxicodendron 4 216
R. typhina 4 21
Rhynia major 5 98
Ribes spp. 1 248-9, 295
R. nigrum 1 294
Ricinodendron africanum 3 131
R. heudelotii 1 46
R. rautanenii 1 226
Ricinus communis 5 286
Richeria grandis 4 157
Rinorea fasciculata 5 107
R. palauica 1 249
R. solomonensis 5 107
Robinia 2 16
R. luxurians 1 254-5
R. neomexicana 4 252
R. pseudoacacia
 afforestation 5 31, 67
 erosion control 2 69, 283, 3 106,
 129, 215, 5 13, 111
 shifting sand 1 229, 258, 4 88,
 5 254
 spoil mounds 4 167
 strip-mined land 3 45
branchwood fodder 4 184
calcium content of leaves 2 115
cultivation, effect of 1 258, 3 123
decay-resistant varieties 5 116,
140
diseases 2 119, 191, 3 162, 341, 4
58, 5 243, 279
drought resistance 1 155, 5 197
ecology 5 241
effect on grass growth 4 200
farm planting 2 203
fertilizer treatment 2 187, 3 196
general account 2 44
groundwater relations 178, 212(2)
injury
 frost 3 157, 5 197
 lightning 2 41
 rabbits 2 247
insects 4 252, 253
litter decomposition 1 76
mycorrhiza 5 11
nutrient requirements 3 21
photoperiodism 1 155, 228
planting methods 1 122-3, 4 25
planting stock
 graded 4 227
 storage 3 44
pruning 2 43
root pruning 2 212
root systems in steppe and desert
 soils 2 12, 3 112
seed
 extraction 4 164
 germination 4 25

Robinia pseudoacacia—cont.
seed
 testing 1 121 [164
 treatment 1 122-3, 4 26, 102,
 weight and quantity 5 29
seedling growth, factors affecting
 1 258, 3 40, 123, 4 25, 150, 226,
 227
site quality index 1 300, 2 186, 3
88
soil requirements 1 131-2, 12, 186,
4 23
soil under 1 229, 3 190
sowing depth 1 37
stand density 1 32
variation in growth and form 3 40,
4 96
vegetative propagation 2 213, 4 89
volume estimation 2 330
wood
 durability 4 171, 5 183
 mine timbers 4 232
 yield tables 3 87
— var. *rectissima* 4 96, 5 13, 116
Rondeletia spp. nov. 3 36, 4 158
Roupala repanda sp. nov. 5 169
Rubiaceae 1 246
Rubus spp. 5 281
Rudgea simiarum sp. nov. 3 36
Ruprechtia lundii 2 141
Rutaceae 1 151, 3 134
Ryania pyrifera 5 106
R. sagotiana 5 106

Sabal palmetto 5 55, 193
Saccoglottis gabunensis 3 280
Salix
 bisexuality 2 190
 pollen 5 164
Salix spp.
 afforestation in New York 5 31
 diseases 1 143, 247, 2 120, 3 78,
 249, 342, 4 55, 246, 5 61, 139,
 199, 203, 278, 279, 282
 erosion control 2 91
 flood control 1 51
 forests in Yukon 1 247
 hybrids and hybridization 2 16, 37,
 109, 3 295, 4 89-90, 5 16, 100
 in Argentina 4 106
 in Canada 5 105
 in Palestine 5 100
 in Switzerland 3 295
 in U.S.A. 4 94, 97
injury
 deer 5 174
 glaze ice 3 70
 wind 2 205
insects 2 160, 3 83, 347 (3), 348,
4 252, 5 142
new species 2 37
palaeoecology 2 181
pioneer on drained lakes 4 19
propagation and cultivation in
 Peru 5 249
shelterbelts 3 217, 5 112, 256
stream-bank protection 4 88
wood
 durability 4 171
 preservative treatment 5 189

Salix alba 1 278, 2 123, 3 335, 4 184,
5 103
— var. *caerulea* 1 232, 244, 2 123,
3 111
— var. *vitellina* 3 255
S. amygdaloides 3 204
S. astatulana see *S. floridana*
S. australior 2 27
S. babylonica
 diseases 4 191, 246, 5 138
 fodder tree 3 332, 4 184
 hybridization 4 89
 insects 2 123, 3 255
 photoperiodism 1 235
 uses 4 184
S. bebbiana 3 347
S. caerulea see *S. alba* var. *c.*
S. caprea 2 236, 5 11, 164
S. dinsmorei 2 27
S. elegantissima 4 252
S. floridana (*S. astatulana*) 4 21, 5
23
S. fluviatilis see *S. longifolia*
S. fragilis 1 296, 2 15, 123, 3 111, 4
184, 5 138
S. glauca 5 18
S. hastata 5 278
S. hindsiana var. *leucodendroides*
comb. nov. 4 222
— var. *parishiana* comb. nov. 4
222
S. humboldtiana 4 89-90, 5 17
S. longifolia (*S. fluviatilis*) 2 296, 4
252
S. longipes 5 192
S. lucida 3 255
S. meleina comb. nov. 4 96
S. nigra
 diseases 5 137
 insects 3 254, 255, 4 133
 succession 4 53, 5 241
 vegetative propagation 2 296
 wood
 fibres 5 55
 pulp 5 44, 122, 123
S. nummularia 5 21
S. oxycarpa 5 278
S. pierotti 1 235
S. pseudo-safras 2 27
S. pulchra var. *loeffiae* var. nov. 4
222
— var. *palmeri* var. nov. 4 222
S. pyramidalis 1 248
S. regalis 4 252
S. repens 5 11
S. rotundifolia 5 21
S. scouleriana 5 11 139 278
S. sitchensis 4 246
S. undulata 1 235
S. viminalis 1 235
× *S. viridis* 123
S. walpolei comb. nov. 4 222
Salvadora persica 5 9
Samanea saman see *Pithecolobium s.*
Sambucus spp. 4 162, 5 112, 194, 271
S. caerulea var. *mexicana* 5 106
S. nigra 2 36
S. racemosa 1 161, 2 13, 36, 4 226, 5
199
Sandoricum spp. 5 173
Santalum 2 124

SPECIES INDEX

- Santalum*—cont.
 anatomy and development 4 92,
 93, 5 22
 diseases 1 133, 140, 142, 2 191, 287
 (2), 3 342
 distribution and habitat 5 28
 embryogeny 5 22
 exploitation 5 9
 oil 5 53
 propagation 1 33, 5 28
 vegetative 3 214
 seed treatment 1 209
 seedbed requirements 4 27
S. boninense 2 124
S. lanceolatum 4 92
S. spicatum 5 271
Santiria spp. 4 231
Sapindus drummondii 2 119
S. emarginata 3 214
S. saponaria 4 243
Sapum spp. 4 223
S. aucuparium 3 137
S. biglandulosum var. *nitidum* 3 37
S. bourgeau 5 106
S. cuatrecasasii 5 106
S. laui sp. nov. 2 290
S. schippii sp. nov. 5 169
S. sebiferum 2 296
 Sapotaceae 1 169, 5 21
Sarcocephalus diderrichii 1 211, 3 53,
 5 62, 147, 176
S. trillestii 1 168
Sassafras albidum (*S. officinale*) 3
 196, 5 54, 259
S. varifolium 5 193
Satyria arborea sp. nov. 5 244
Saurauia spp. 4 20, 231
Scaphium spp. 4 231
Scaphula glabra 2 296
Schaefferia elliptica sp. nov. 5 173
Schefflera abyssinica 1 248
S. digitata 2 127
S. octophylla 5 172
S. siebertii sp. nov. 3 115
Schima bancana 2 158
S. wallichii 2 59
Schinopsis sp. 4 106
S. balansae var. *pendula* 5 244
S. brasiliensis 5 113
Schinus molle 2 91, 3 168
 — var. *aireira* 5 270
S. polygamus 5 270
Schizomeria ovata 3 133, 4 38, 5 40,
 46
S. oleosa 3 330
Schleichera trijuga 2 170, 4 27
Schuurmansia spp. nov. 4 20
Sciadopitys 4 16
S. verticillata 4 156, 248
Sclerocarya birroea 4 153, 184
Scleropyrum wallichianum 4 92, 93,
 5 22
Scorodocarpus sp. 3 193
S. borneensis 3 321
Scottellia coriacea 2 307
Securidaca longipedunculata 4 243
Securinea 4 21
Secemarpus sp. nov. 4 20
S. anacardium 5 238
S. gardneri 2 66
Senefeldera nitida 5 106
Senefeldera scutchiana 5 106
Sequoia 1 143, 247, 4 16, 221, 5 97
S. (Sequoiadendron) gigantea
 bark thickness 2 196, 5 17
 cytology 4 90
 disease 1 85, 4 248
 fire susceptibility 2 196
 general account 5 104
 in New York state 5 104
 in U.S.S.R. 2 208
 increment 3 119
 morphology and embryogeny 1
 143, 2 196, 5 97, 166
 nomenclature 4 221, 5 243
 vegetative propagation 5 235
S. sempervirens
 bark
 anatomy 5 239
 fibres 4 52
 peeling 4 111
 dendrochronology 3 86 (2)
 density of cell sap 3 24
 diseases 4 189, 248
 forest floor 2 186
 frost damage 5 58
 in Australia 2 263
 in New York state 2 104
 in N. Zealand 1 33
 in U.S.S.R. 2 208
 increment 4 258
 insects 5 65
 management 1 165, 3 210, 5 208
 morphology and embryogeny 1
 143, 2 123, 196, 5 97
 natural regeneration 4 162
 vegetative propagation 1 261–2
 volume tables 1 192, 3 172, 5 205
 wood
 durability 1 181, 276, 4 171
 effect of chemicals on 1 174
 grading 3 153
 plastic 5 188
 seasoning 2 151, 3 327
 shingles 1 181
 tanks 2 65, 67, 154, 5 119
S. wellingtonia see *S. gigantea*
Sequoiadendron see *Sequoia gigantea*
Serenoa repens 5 193
Serianthus spp. nov. 4 223
Sesbania aculeata 4 17
S. sesban 2 158
Shaferodendron gen. nov. 4 158
Shorea spp.
 in Sumatra 3 193
 natural regeneration 1 113, 159–60
 nurse trees 1 92
 phenology 2 288
 size 3 171
 underplanting secondary forest 1
 210
 volume tables 2 76
 wood
 immune to powderpost beetle 2
 2 143
 plywood 1 314
 pulp 2 308, 309, 314
 strength 3 135
S. astylosa 4 35
S. curtisii 2 219
S. eximia 2 308
S. gisok (*guiso*) 3 135, 4 35
Shorea gibbosa 1 169
S. guiso see *S. gisok*
S. leproslua 1 114, 2 76, 214, 218,
 219
S. negrosensis 3 135
S. parvifolia 2 76
S. polysperma 3 135, 4 62
S. robusta
 diseases 2 52
 ecology 1 24
 general description 5 113
 growth rings 1 171–2
 kernel fat 4 216
 protection against frost 1 162
 regeneration 1 254, 313, 2 88 (2),
 130 (2), 171, 206, 263, 295, 338,
 3 43, 123, 212 (2), 213, 4 24, 167
 silviculture (general) 1 313, 2 263
 slash burning 3 213
 transplanting 4 167
 wood
 charcoal 3 234
 heartwood 5 113
 preservative treatment 2 63
 roof trusses 4 244
 seasoning 1 286, 4 241
 sleepers 1 48
S. rugosa 1 99–100
S. seminis 4 35
S. squamata 3 135, 259, 4 62
S. teysmaniana 1 38, 53, 4 62
Sickingia mollis 5 173
Sideroxylon spp. 4 110, 158
S. oxyacantha 1 248
S. steyermarkii sp. nov. 3 36
Silvia itauba 5 113
Simaruba sp. 3 222
S. amara 4 157
S. glauca 4 83
S. opaca 5 113
Sindora 3 55
Siphonia ridleyana see *Hevea* r.
Schimmia foremanii 2 134
Sloanea woollsii 3 308, 5 46
Sloetia spp. 4 231
S. elongata 3 321
Smilacaceae 2 198
Sonneratia 4 17
S. caseolaris 5 193
Sophora japonica 3 112
Sorbus sp. 3 109, 292, 5 165, 199
S. americana 5 31
S. aria 2 181
S. aucuparia
 boron content of leaves 3 23
 effect of *Oxalis* on seedling growth
 2 207
 on sandy soils 2 295
 pioneer sp. 1 83
 seed
 germination 4 101, 5 29
 treatment 2 36
 underplanting Pine 2 42
S. torminalis 2 181
Soyimida febrifuga 4 101
Spondias mangifera 4 41
S. mombin 3 137
Stellera chamaejasmae 1 170
Sterculia sp. 4 40
S. alata 2 8, 141
S. apetala 5 203

- Sterculia balanghas* 2 264
S. caribaea 3 137, 5 203
S. diversifolia 4 57, 5 196
S. foetida 3 308, 5 113
S. indica 5 194
S. rhinopetala 2 307, 5 51
S. speciosa 2 141
S. urens 5 271
 Sterculiaceae 1 272
Stereospermum dentatum 1 94
S. kunthianum 1 248
S. suaveolens 5 197
Stewartia sp. 1 262
Streblus asper 4 41
Strobilanthes andamanensis 4 20
Strombosia glaucescens 1 169
S. pustulata 2 90
Strombosiopsis tetrandra 1 169
Strychnos 1 94, 3 50
S. nux-vomica 3 214, 4 27
Stylogyne perpunctata sp. nov. 4 159
 Styracaceae 3 115
Styrax benzoin 2 308
S. vulcanicola sp. nov. 3 36
Swartzia cinerea 5 113
S. laevicarpa 5 113
S. nuda 5 106
Swietenia spp. 1 172, 297, 3 133, 4 97, 158
S. candollei 4 27
S. humilis 1 172
S. macrophylla
 afforestation for erosion control 4 227
 direct sowing 4 25
 diseases 4 57
 general account 1 172, 5 113
 general silviculture 1 13
 in British Honduras 1 208, 4 157
 in Guatemala 4 83
 in India 1 209
 increment 1 112, 5 257
 insects 1 13, 209
 natural regeneration 1 208
 planting stock 1 209, 2 170, 3 214, 4 27
 pruning 3 218
 seed storage 1 34, 5 110
 shade requirements 1 209, 3 212, 4 25, 28
 underplanting Teak 4 28
S. mahagoni
 diseases 1 239–40
 distribution 2 112, 5 240
 ecology 1 26
 general account 1 172
 in Florida 3 212
 planting methods 4 166
 silviculture 2 338
 wood
 anatomy 5 257
 termite resistance 2 311
Swintonia floribunda 2 8, 3 65
Symphonia globulifera 3 65, 137
Symphorema luzonicum 1 252
 Symplacaceae 1 249
Symplococarpon 3 117, 4 159
Symplocos spp. nov. 2 26, 3 292, 5 240
S. indochinensis 5 169
Syncardia 5 98
Syncarpia laurifolia 2 90, 3 139, 4 36
S. subargentea 5 18
Syndiclis spp. 4 223
Synoum glandulosum 1 934
Syringa sp. 3 256
Syzygiopsis 4 159
Syzygium spp. 2 27, 3 292, 4 97 (2)
S. guineense 1 248

Tabebuia spp. 1 113, 4 106
T. chrysantha 3 222
T. donnell-smithii 4 83
T. dubia 2 201
T. pallida 2 338, 5 23
T. serratifolia 3 137
Tabernaemontana heyneana 5 195
Taiwania 5 98
T. cryptomerioides 3 291
T. flousiana sp. nov. 2 27
Talauma spp. 4 223
T. phellocarpa 1 255, 5 35
Tamarindus indica
 charcoal 5 127
 dye stuff 5 195
 identification 4 231
 in Deccan 5 9
 in Ecuador 1 169
 in Nigeria 4 184, 197
 pectin 5 54
 sizing material 5 194
Tamarix sp. 4 83
T. aphylla (*T. articulata*) 1 103, 4 229, 5 10, 30, 180
T. articulata see *T. aphylla*
T. gallica 5 61
T. odessana 3 128
T. tetrandra 3 128
Tapiriria guianensis 3 137
Taraktogenos kurzii 2 8
Taraxacum koksaghyz 5 53
Tarenna borii sp. nov. 2 26
Tarrietia sp. 3 152
T. actinophylla 4 219
T. argyrodendron var. *peralata* 2 48, 172, 3 32, 5 46, 124
T. utilis 5 147
 Taxodiaceae 2 66
Taxodium distichum
 disease 1 140, 2 18, 145
 forest types 1 147, 5 102
 frost injury 5 58
 in France 2 37
 morphology 2 196, 4 17, 5 166
 palaeoecology 3 97, 4 11
 shade tree 2 214
 succession 5 241
 wood
 aircraft timber 5 115
 durability 2 62, 3 62, 4 171, 5 183
 'pecky' 1 140
 preservative treatment 5 189
 seasoning 2 310
 tanks 4 233, 5 119
 utilization 3 307
T. mucronatum 5 169, 248
Taxus 5 16
Taxus spp.
 adventitious roots 5 17
 hybrids 2 16, 3 109

Taxus spp.—cont.
 injury
 salt spray 2 191
 wind and drought 3 334
 insects 4 251
 vegetative propagation 1 260
T. baccata 1 135, 262, 2 118, 181, 3 114, 4 63, 248
T. brevifolia 4 248
T. cuspidata 3 25
T. media 4 248
Teclea nobilis 4 109, 5 191
Tecoma 4 106, 5 257
Tectona grandis
 agri-silviculture 1 125, 209, 313, 3 301
 branching and seed origin 1 21
 chlorosis 1 210
 clear cutting 1 313
 control of defoliation 5 203
 direct sowing 1 112
 distribution 1 172
 ecology 4 93
 extraction 2 306
 fertilizer treatment 3 196
 frost hardiness 1 5
 general account 1 172, 4 31 (2), 5 113
 girdling 5 77
 grass, effects of 2 158
 growth rate and strength 5 115
 growth rings 1 171, 5 257
 in Argentina 4 98
 in Cameroons 2 208
 in Nigeria 3 211
 in Trinidad 1 29, 210, 3 213, 299, 5 96
 insects 1 85, 114, 152, 250, 2 28 (2), 91, 173, 265 (2), 5 65
 irrigation 1 209
 leaf anatomy 5 238
 Loranthus infestation 4 55
 natural regeneration 2 170, 338, 339, 3 213
 factors affecting 1 254, 3 245, 288
 net price 5 290
 nursery treatment 2 170, 171, 4 27
 plantation treatment 2 112, 325, 3 304, 4 165, 5 177
 planting
 methods 1 5, 37 (2), 209
 season 1 38
 stump 1 37 (2), 38, 209, 2 89, 211, 3 214, 4 26, 166, 5 178
 pruning 4 29
 rotation 2 332, 3 353, 354
 royalty assessment 1 58
 seed
 germination 1 162, 2 263, 5 110
 origin 1 21
 treatment 4 164
 slash burning, effect of 3 213, 4 25
 soil requirements 2 282, 5 13
 spacing 1 112, 125, 209, 2 131
 thinning 1 40, 2 88, 5 32, 112 (2)
 natural 1 92
 underplanting 1 209, 210, 4 28
 volume tables 5 143
 weeding 2 42

SPECIES INDEX

Tectona grandis—cont.

- wood
 - aircraft timber 4 168
 - durability 3 137
 - fencing material 3 343
 - fire resistance 2 304, 3 55
 - hardness 1 174
 - preservative treatment 2 339
 - properties 1 168, 172, 174
 - pulp 2 226
 - seasoning 1 47, 5 190
 - 'stones' in 1 152
 - tanks 2 233
 - yield tables 1 29, 300, 2 331
- T. philippinensis* 3 214
- Tephrosia candida* 4 183
- Terebinthales 4 31
- Terminalia* sp. 2 203
- T. amazonia* 3 65
- T. arjuna* 4 49, 5 138
- T. belerica* (*T. edulis*) 4 121, 5 238
- T. brownii* 2 173, 3 291, 4 109
- T. catappa* 3 308, 5 113, 238
- T. chebula*
 - in Central Provinces 2 199
 - nursery technique 1 90
 - planting vs. sowing 1 112
 - pulp 1 46
 - seed
 - germination 1 90, 5 253
 - treatment 1 209, 2 263, 4 26, 101
 - seedbed requirements 4 27
 - tannin 4 121
- T. crassipes* 1 249
- T. crenulata* see *T. tomentosa*
- T. edulis* see *T. belerica*
- T. ivorensis* 3 53, 5 147
- T. latifolia* 5 41
- T. macroptera* 4 197
- T. myriocarpa* 2 90, 5 113
- T. obovata* 3 137
- T. paniculata* 2 170, 339, 3 220, 5 127
- T. pyrifolia* 1 112
- T. superba* 1 94, 168, 211, 2 94
- T. tomentosa* (*T. crenulata*) 1 171, 209, 2 220, 4 231, 5 78, 127
- Ternstroemia* spp. 4 97, 220, 5 19, 23
- T. polypetala* 4 243
- Tetracera 1 150
- Tetracoccus* 4 159
- Tetractomia* sp. 4 231
- Tetrameles* 4 223
- T. nudiflora* 1 100, 2 8, 265, 3 63, 4 43, 5 190
- Tetrorchidium jamaicense* 5 106
- Theaceae 1 249, 4 107
- Theobroma* 2 291
- Thesium wightianum* 4 92, 93, 5 22
- Thespesia populnea* 4 231, 5 203
- Thuja* spp. 1 260, 2 119, 191, 3 133, 4 25, 5 17
- T. occidentalis*
 - disease 4 190
 - fertilizer treatment 3 196
 - in Ukraine 4 98
 - increment 2 187
 - insects 5 107
 - mineral content of leaves 2 115
 - seed storage 4 25
 - seedling growth 3 40
 - vegetative propagation 1 261, 4 16

Thuja occidentalis—cont.

- volume tables 2 250
- wood
 - anatomy 3 218, 4 31, 230
 - blue stain 4 189
 - pole specification 5 192
 - preservative treatment 4 117
 - shingles 4 49
- var. *pyramidalis* 1 261
- T. orientalis*
 - cytology 2 124
 - disease 2 122, 4 246
 - frost heaving 3 215
 - in Indiana 3 215, 5 249
 - seed viability 3 213
 - shelterbelts 3 217
 - vegetative propagation 1 260
- T. plicata*
 - direct sowing 1 257, 2 38
 - diseases 2 19, 4 127, 246, 5 278, 281
 - effect of grazing 5 140
 - in Denmark 5 174, 250
 - in N. Zealand 1 33, 2 42, 264
 - in Russia 1 254, 4 98
 - insects 1 316
 - litter 4 151
 - seed germination 2 295
 - silvicultural systems 2 206
 - soil requirements 3 298
 - windthrow 3 240, 5 116
- wood
 - collapse 3 55 [183]
 - durability 1 181, 4 35, 5 116,
 - paintability 2 151
 - pole specifications 5 128, 192
 - preservative treatment 2 63, 5 46
 - properties 1 271, 3 222
 - seasoning 1 182, 3 148, 234
 - toxicity of heartwood 5 116
 - uses 1 271
- Thujopsis* 2 119
- T. dolabrata* 1 120, 2 119
- Thyrsothachys oliveri* 3 295
- Tilia* 4 158
- Tilia* spp.
 - branchwood fodder 4 184
 - calorific value 2 49
 - effect of potassium bichlorate in-jection 4 233
 - hybrids 2 16, 3 109
 - insects 1 238
 - litter 2 188, 5 232
 - palaeoecology 5 8
 - producer gas fuel 4 241
 - pulp 1 284
 - sugar content of sap 4 135
- T. americana* (*T. glabra*)
 - diseases 3 341, 5 199, 278
 - fibres 5 55
 - identification 3 105
 - injury
 - deer 4 21, 5 140
 - porcupine 3 251
 - snow 3 76
 - insects 5 63, 140, 142
 - litter 2 45, 3 284
 - log grading 5 185
 - nutrition 1 251
 - seed germination 3 127, 5 110
 - soil requirements 3 120

Tilia americana—cont.

- volume tables 1 298, 2 162, 249, 5 289
- wood
 - durability 4 171
 - equilibrium moisture content 3 310
 - plywood 4 174
 - pulp 1 284
- T. cordata* (*T. parvifolia*)
 - fat content 3 136
 - general account 4 31
 - growth substance 2 283
 - mycorrhiza 5 11
 - oil 4 51
 - producer gas fuel 4 47
 - properties 4 105, 5 37
 - reaction wood 2 45
 - seed production 1 34
 - seed treatment 2 36, 4 226
 - uses 4 31, 105
 - wind resistance 2 205
- T. glabra* see *T. americana*
- T. grandifolia* see *T. platyphyllos*
- T. parvifolia* see *T. cordata*
- T. platyphyllos* (*T. grandifolia*) 1 34, 3 198, 4 105
- Tipuana* 4 106
- Toluifera balsamum* 1 41
- Torresia* sp. 4 106
- T. acreana* 5 113
- Torrea* 4 17
- T. californica* 3 29, 4 248, 5 166 (2)
- T. nucifera* 3 29
- T. taxifolia* 3 23
- Torrubia fragrans* 3 82
- Tovomita plumieri* 4 157
- Toxicodendron* 2 140
- Toxylon pomiferum* see *Maclura pomifera*
- Trema orientalis* 1 209, 2 47, 170, 199, 308, 4 121
- Trewia nudiflora* 2 8
- Trichilia* sp. 5 51, 102
- T. emetica* 2 238
- T. havanensis* 5 19
- T. oblanceolata* 3 137
- T. vucatanensis* sp. nov. 4 159
- Trichomanes tenerum* 4 88
- Trigoniastrium hypoleucum* 2 290
- Trigonostemon* spp. nov. 4 21, 231
- Trimenia* spp. 4 22
- Triplochiton* sp. 1 168, 277, 2 203
- T. scleroxylon* 1 168, 211, 277, 2 265, 3 61, 118, 131, 332
- Tristania* sp. 4 20, 35, 5 19
- T. conferta* 3 139, 4 42, 236
- T. laurina* 4 243
- Trochodendron aralioides* 5 237
- Tsuga*
 - hybrids 2 16
 - palaeoecology 2 182, 5 8 (2)
 - vegetative propagation 4 16
 - wood anatomy 3 308
- T. albertiana* see *T. heterophylla*
- T. canadensis*
 - disease 1 188
 - ecology 5 18, 239
 - fire resistance 3 160
 - in Missouri 5 21
 - in Russia 1 255, 4 98

SPECIES INDEX

Tsuga canadensis—cont.

increment 3 175, 260, 4 197
factors affecting 1 272, 3 86, 4 258

injury

deer 4 21
drought 3 70
porcupine 3 164, 251
salt spray 2 191

insects 4 59, 252

litter 2 115, 5 166

moisture requirements 4 258

natural graft 5 17

natural regeneration 1 129

factors affecting 3 33, 114, 211

palaeoecology 3 97

phenology 3 208

root structure 3 133

roots, adventitious 5 17

soil requirements 1 129

vegetative reproduction 2 297, 3 201, 4 89

volume tables 3 172, 349

water content of trees 2 17

wood

durability 2 62, 3 62, 4 178

grading rules 4 49

identification 4 105

preservative treatment 2 172

seasoning 2 151

T. caroliniana 1 188

T. chinensis 5 139

T. heterophylla (*T. albertiana*)

direct sowing 1 257

disease 2 19, 145, 4 246, 247

distribution 5 168

girdling 5 78

in Alaska 3 193, 4 18

in Britain 5 109

in Denmark 5 250

in N. Zealand 5 250

increment rate 2 331

injury from windthrow 3 240

insects 3 345

litter 4 151

medical properties of needles 5 270

natural regeneration 3 121

nutrient requirements 5 26

palaeoecology 4 97

production and marketing 2 291, 3 92

rotation 3 88

seasoning 2 59, 3 148

seed germination 2 295

silvicultural systems 2 206

succession 3 115

tannin 4 185, 243

vegetative propagation 5 14

wood

aircraft timber 4 173, 237, 5 115, 214

chemistry 2 143, 3 221

durability 5 61, 116

grading rules 4 182

preservative treatment 1 181

properties and uses 3 152, 153, 328

pulp 2 226, 3 230

sawmill studies 5 210

steaming 5 122

Tsuga heterophylla—cont.

wood structure 5 26

T. mertensiana 4 18

T. yunnanensis 3 341, 5 139

Turpinia sp. nov. 4 21

T. occidentalis 5 19

Tylecarpus 5 243

Uapaca kirkiana 2 171

Ulmus spp.

breeding 5 236

chemotherapy 1 247, 3 76

cleavage strength 4 232

diseases

black spot 4 246

bleeding canker 3 76

Dutch Elm disease 1 137, 142,

240, 2 21 (3), 122, 3 79

Nectria die-back 4 249

phloem necrosis 1 82, 2 18, 191

wilt 1 263, 2 194

fastigate forms 5 247

fat content 4 109

girdling 5 78

hedge planting 1 262, 5 112

hybrids 2 16, 3 109, 4 16, 217

disease resistant 1 137, 240, 5 140

import to S. Rhodesia forbidden

5 275

injury

lightning 1 127

oil spray 5 136

salt spray 2 191

insects

bark-beetles 2 21, 53, 3 255, 4

132, 133, 253, 5 63

borers 3 347 (2), 5 202

defoliators 2 328, 3 255, 4 132,

5 107, 283

galls 4 59

scale 3 170

litter decomposition 5 232

palaeoecology 2 181

poisoning for beetle control 5 283

susceptibility to lightning strike

2 284, 5 274

vegetative propagation 1 261

water absorption 5 90

wound healing, effect of shade on

5 286

U. americana

diseases 2 18, 3 78, 249, 5 282 (2)

cankers 2 245, 3 162, 5 278

damping off 3 249

Dutch Elm disease 2 21, 285,

3 78, 250, 4 190

mosaic 3 80

phloem necrosis 4 250

wetwood 4 249

wilt 1 263, 2 327

distribution 4 94, 157

drought resistance 2 292, 5 197

fertilizer treatment 2 282, 4 14

high temperature tolerance 2 292

injury from climbers 4 55

insects

aphids 4 252

bark-beetles 1 243, 4 190

capsids 1 152

Ulmus americana—cont.

insect defoliators 1 152, 2 160, 248,

4 60, 253, 5 63, 140

litter 2 115, 3 284

root

pruning 2 212

system 2 204

seed

germination 4 25

protein content 5 234

storage and treatment 1 87, 2

131

shelterbelts 1 269

soil requirements 3 120

succession 3 204, 4 218

transpiration 1 81

trap logs 2 160

wind resistance 2 205

wood

durability 2 62, 3 62

preservative treatment 5 189

yield 4 87

Ulmus campestris see *U. procera*

U. carpinifolia (*U. foliacea*, *U. nitida*)

3 78, 250

— var. *cornubiensis* (*U. stricta*) 1

137, 5 243

U. 'Christine Buisman' 1 137

U. diversifolia 1 150

U. effusa see *U. laevis*

U. foliacea see *U. carpinifolia*

U. fulva 1 243, 2 292, 3 349, 4 133,

5 55, 67

U. gausenii sp. nov. 2 27

U. glabra (*U. montana*) 2 73, 3 290,

4 164, 5 59, 243 (2)

— var. *fastigiata* 2 327

U. hollandica 2 73

U. japonica 3 78, 250

U. laciniata 3 60, 142

U. laevis (*U. effusa*) 2 283, 3 78,

250

U. macrocarpa 3 60, 142

U. minor nomen ambiguum 1 248

U. montana see *U. glabra*

U. nitida see *U. carpinifolia*

U. parvifolia 2 292, 327

U. plotii 3 295, 5 243

U. procera (*U. campestris*)

bud formation 5 15

disease 1 140, 5 199

Dutch Elm disease 1 105, 242,

2 273, 3 78, 250, 5 59, 243

wilt 2 327

general account 5 243 (2)

hedges 1 262

injury

frost 4 53

glaze ice 3 70

salt spray 4 245

insects 1 243

vitamin B in buds 3 199

wood

anatomy 4 233

chemical composition 2 221

locomotive fuel 4 245

properties 1 271

U. pumila

cold storage of nursery stock 3 44

diseases 1 241, 2 327, 4 127

cankers 4 246, 5 199

SPECIES INDEX

- Ulmus pumila*—cont.
Dutch Elm disease **1** 142, **2** 21,
73, **3** 78, 250, **4** 58
root rot **4** 57, **5** 278
witches' broom **4** 190
drought resistance **3** 335
general account **2** 202
in Michigan **2** 202
in New York State **5** 31
injury
frost **3** 156, **4** 186, **5** 197
rodents **4** 59
wind **2** 205
nutrient deficiency **3** 241
seed germination **4** 25
shelterbelts **5** 112
soil requirements **3** 298
wood
properties **1** 27
strength **3** 311, **4** 170
U. racemosa see *U. thomasi*
U. sativa nomen ambiguum **1** 150
U. stricta see *U. carpinifolia* var.
cornubiensis
U. thomasi (*U. racemosa*) **4** 178, **5** 189
U. wyssotzkii **4** 96
Uncaria gambir **1** 105, **3** 330, **4** 121
Upuna gen. nov. **4** 222
Urandra ammu **4** 17 (2)
Urera baccifera **5** 55
Urophyllum spp. **4** 231

Vaccinium meridionale **5** 19
V. myrtillos **4** 187
Vantanea barbourii **5** 173 (2)
Vatairea guianensis **2** 141
Vateria copallifera **2** 66, 237
V. indica **1** 83, 209

Vatica sp. **2** 265, **3** 135, **4** 35, 96
V. chinensis **2** 66
V. cuspidata **3** 309
V. leucocarpa **5** 130
V. stappiana **3** 309
Veeresia clarkii gen. et. sp. nov. **3** 37
Verbenaceae **3** 51, 206, 295, **4** 157,
5 105
Verbesina steyermarkii sp. nov. **3** 36
Vernonia spp. **4** 231
Viburnum tricoctatum **3** 35
Villaresia moorei **4** 219
Villebrunea spp. **4** 231
Virola bicuhyba **2** 141
V. koschnyi **4** 157
V. merendonis **1** 112, **5** 10
Vitex spp. **1** 209, **3** 117, **4** 231
V. aherniana **4** 35
V. altissima **1** 250
V. capitata **3** 137
V. cienkowskii **4** 197
V. cuneata **4** 184
V. divaricata **3** 137
V. excelsa sp. nov. **3** 117
V. lucens **1** 312, **2** 265
V. negundo **1** 133
V. parviflora **1** 95, **4** 35
Vochysia sp. **3** 222
V. hondurensis **5** 10
Vouacapoua americana **5** 113

Weinmannia spp. nov. **3** 295, **5** 102
W. aphanoneura **2** 290
W. dubitensis **2** 290
W. pseudolaurina sp. n. **4** 96
W. racemosa **3** 338
Wendlandia exserta **1** 258

Widdringtonia juniperoides **4** 48
W. whytei **1** 210
Winteraceae **1** 246, **5** 97, 99, 106,
167, 239
Wormia sp. **4** 20, 231
Wrightia laevis **5** 107
W. tinctoria **5** 9, 195
W. tomentosa **5** 195

Xanthomyrtus spp. **4** 97
Xanthorrhoea arborea **5** 19
Xanthostemon spp. **4** 20
X. verdugonianus **4** 35
Xanthoxylum see *Zanthoxylum*
Xylia dolabriformis **1** 54, 112, 250,
2 112, 170, **3** 220, 296, **4** 16
X. xylocarpa **1** 209, **5** 127
Xylocarpus spp. **5** 173
X. granatum **4** 17
Xylopia sp. **3** 228
X. bocatorena **5** 106
X. pacifica sp. nov. **5** 244
Xylosma nitidum **5** 19

Zanthoxylum (*Xanthoxylum*) spp. **3**
37, 222, **4** 158, **5** 19
Z. clavaherculis **4** 121
Z. flavum **2** 112
Z. rhetsa **4** 168, **5** 181, 186
Z. scheryi sp. nov. **4** 96
Zelkova crenata **5** 258
Zizyphus jujuba **1** 209, **2** 292
Z. mauritana **2** 173, **4** 109
Z. mistol **5** 270
Z. xylopyrus **4** 27
Zollernia paraensis **5** 113

FORESTRY ABSTRACTS



FIVE-YEAR INDEX
VOLUMES 1—5, 1939-44

Prepared by
COMMONWEALTH FORESTRY BUREAU, OXFORD

Published by
Commonwealth Agricultural Bureaux, Farnham Royal, England

FORESTRY ABSTRACTS

FIVE-YEAR INDEX

TO

VOLUMES 1—5, 1939-44

PART I (published 1950)

	PAGE
1. FOREWORD - - - - -	3
2. LIST OF LEADING ARTICLES - - - - -	4
3. AUTHORS - - - - -	5
4. SPECIES - - - - -	42

PART II (published 1966)

5. SUBJECT - - - - -	81
6. GEOGRAPHICAL - - - - -	101

SUBJECT INDEX

Entries (a or b) after volume and page number indicate the column in which the abstract begins. Where the column is not specified the subject occurs in two or more abstracts beginning in both columns on a page.

- ACCIDENTS**
causes 4 260a
first-aid 3 263a, 4 138a
prevention 3 179-80, 263a, 4 198a, 260a, 5 69a
statistics 4 260b
Accountancy 2 80, 4 198b
Acetone from waste wood 3 69a
Aerial photography 1 54b-5, 106a, 194-6a, 212-3, 300a, 311b, 2 78a, 81b, 162a, 3 158b, 178b, 353b, 4 138a, 259b, 5 146, 155b, 288b-9
equipment 1 196a, 2 332b
plotting 1 300a, 2 78a, 332a, 3 178b
Aerial reconnaissance 1 55, 106a, 300a
Afforestation 1 33a, 39a-40a, 73b, 91a, 160b-1a, 162b, 198b, 264a-5, 305a, 2 32b, 33b, 38b, 137-8a, 208, 260, 292a, 3 119a, 127b-9, 176b, 267a, 306b, 4 27b, 66b, 103b-4a, 165, 167, 197a, 200a, 227, 5 29b-31 75-6, 112a, 177b, 179a, 212a, 248b, 254b, 291b
alluvial soils 5 162b
arid areas 1 164b, 269b, 2 138a
bare land 5 70a
catchment areas 1 19b, 2 283a, 4 259b
eroded land 1 265b, 3 47a, 129b, 5 87a
felled areas 3 301a
heathlands 1 253a, 5 249b
hurricane areas 3 117a
irrigated 2 214a, 5 30a
old fields 2 138a, 3 129a, 5 25a
peatland 1 39a
sand dunes 1 229a, 258a, 265a, 2 33a, 35b, 3 47a, 106a, 215b, 4 100a, 103b, 215b, 5 89b, 254a
spoil heaps 4 27b, 167a
steppes 2 130a
tropical 1 80b, 2 206b, 3 299b, 303b
waterlogged areas 1 305b, 2 137b, 3 43b, 128b, 211a, 214a, 4 103b, 261a
Age of trees 2 205b, 3 41b, 120b, 4 169b, 5 109a, 233b, 248a
basal area correlation 1 192b
Agricultural equipment, wood for 5 129a
Agri-silviculture 1 31b, 86a, 125a, 2 208, 3 21b, 213a, 299a, 301a, 351b, 4 27b, 163b, 5 70, 251b
see also Plantations
Aircraft construction 1 184a, 3 228b, 4 33b, 39a, 41a, 44a, 168b, 171a, 172a, 237a, 238b, 5 41b, 42b-3a, 115a, 117a-8b, 119b, 121a, 182a, 188a, 214b, 262b, 264a
airscrew blades 1 97b, 3 318a, 4 236a, 5 262b
grading timber for 4 173b
Aircraft construction—*cont.*
species suitable for 1 282a, 2 65a, 3 65a, 135b, 236b, 329a, 4 168b, 5 149b, 263a
testing wood for 2 50b, 4 232a
Alcohol from wood 1 290a, 2 234b, 3 64b, 142b, 4 48a, 120a, 182a, 5 50b, 115b, 191a, 268b
Alkaloids 3 23b, 5 194a
see also Chemical constituents of plants
Anatomy, plant 1 244b, 2 24a, 3 23b, 30a, 5 166b, 172a, 238a
apical meristem 4 17b, 156b, 5 97b, 166b
cambium 2 15b, 3 133b, 5 15a, 92a
cuticle 5 238a
parenchyma 1 272b, 5 183b
phloem 1 144b
root 5 97a
root-cap 1 143b
secondary thickening 1 170a
sieve tubes 2 45b
stem 2 46a
vascular system 1 170, 4 17b, 230b, 5 97
see also Bark, Branches, Leaf, Morphology, Needles, Seedling, Wood anatomy
Armillaria root rot 1 295b, 2 72a, 3 248a, 5 176b
Aspect 3 102a
Atmospheric pollution
fluorine gases 4 54b
sulphur dioxide 1 243b, 315, 2 258b
Attractants 3 348b, 4 254a, 5 62b
BACTERIAL diseases of plants 1 240a, 242a, 2 20a, 119b, 121b, 192a, 3 79a, 162a, 163b, 246b, 249b, 4 248b-9a, 5 274a
Bacterial symbiosis 3 194a, 285a, 4 103a
Bamboo 1 248b, 2 125a, 5 24a, 173b
boxes 5 191b
diseases 3 251a, 5 62a
effect on hardwood regeneration 3 245b
forest 2 112a, 279a
hardening treatment 3 155b
insect pests 4 194a
nails 5 191b
pulp 5 45a
transplanting 4 51b
Bark
anatomy 5 239a
fauna 3 295b
formation 3 23b
thickness 2 77b
types 1 236a, 3 160a, 5 17b
volume 2 162b, 3 85b
Bark—*cont.*
waste 2 240a, 4 52a
see also Chemical constituents of plants
Bark beetles 1 85b, 105, 140a, 141b, 154a, 238-9a, 243a, 2 21b, 74-5a, 122a, 159-60, 327a, 329b, 3 82b, 145b, 165b-7, 247-8a, 250b, 252b, 253b, 312b, 343b-4a, 347b, 4 22b, 60a, 116a, 129b, 130b-1a, 160, 193a, 224b, 251b, 5 24, 64-5a, 66, 108, 177b, 189a, 202a, 203a, 204b, 284, 285b
see also Borers, Dutch Elm Disease
Barking
by hand 2 306b, 318a, 4 50a, 5 185a
chemically 5 40a
machines 2 224b, 320a
methods 4 111a
physiological investigations 4 121a
pulpwood 2 224b
Basal area 3 171a, 4 63b, 136a, 5 287a
Battery separators 1 101b, 4 48b, 5 35a, 51b, 269a
Beams
bending stresses 4 108b
deflection 4 34b
design 2 234a, 3 333b
fireproofing 4 117a
laminated 1 49a, 3 318a, 4 174b, 244b, 5 264a
plywood 5 188a, 196a
strength 4 34b
tests 2 302a, 4 34b, 108b, 5 188a
Beavers 5 179a
Bee-keeping 4 184a, 5 134b
Biological control
see Insect pests, Parasites, Predators
Birds
damage to trees 2 287b, 3 251b, 4 163a
ecology 5 244b
effect on afforestation 1 249a, 4 139a
food of 5 174a
insect control 4 128b
Blight
Arborvitae 3 122a, 4 190a
Cedar 2 19b, 120a, 3 338b, 5 276a
Chestnut 4 248b, 5 61a, 137b
leaf 1 141a
tip 3 75a, 4 126b, 190b
Tung 5 281b
Walnut 3 342
Willow 5 61b
Blind slats 4 120b
Blister rust 1 239b, 241b, 294b-5, 2 20a, 72a, 120b, 136b, 285a, 326b-7a, 3 74b, 76a, 160b-1, 248b, 262a, 339b, 340b, 4 56a, 126, 189b-90a, 247b, 5 59b, 277

Blister rust—*cont.*
 control 5 60a
 resistance 5 60b
 Boats and ships 2 65a, 318b, 3 218a,
 4 147b, 39a, 5 41b, 188a, 258a,
 264a, 267b
 Borers
 logs 1 43a, 85b, 280a, 2 52b-3a,
 60b, 223a, 3 145b, 170b, 312b,
 4 41b, 110a, 127b, 131b, 5 25a,
 39a, 141b, 173b, 259b
 timber 1 99a, 152a, 153, 250a,
 2 21b, 61a, 122a, 145b, 152,
 177-9, 223a, 229, 303b-4a, 311,
 3 54b-5a, 61a, 137b-8, 145a,
 222a, 223b-4a, 312b-3a, 321b,
 4 22a, 36a, 41b, 110a, 116, 159b,
 171b, 230b, 234a, 5 39, 47a,
 117b, 184a, 189a, 260
 wood of living trees 2 161a, 3 168b,
 5 246b
see also Bark beetles, Insect pests,
 Marine borers, Shoot(s), borers
 Botany
 bibliography 5 19b
 collecting methods 5 20b
 identification keys 1 122a, 248b,
 2 27a, 198, 3 32b, 116b, 4 18b,
 21b, 94a, 95b, 157a, 222a, 5 19,
 104a, 106a, 170a, 238a
 policy for forest botany 5 163a
 systematics 1 27, 84b-5, 149-51,
 247-9a, 2 26-9, 126b-7, 200b-
 2a, 289-91, 3 35-7, 115-7a,
 205b-6, 293b-5a, 4 20-1, 95b-7,
 158-9, 220b-3, 5 20b-4a, 103-
 7a, 170b-3, 242b-4
 textbook 5 170a
 Bracken 3 21a, 170a, 4 225a
 Branches
 anatomy 3 309a
 dead 1 244b
 development 1 21b, 95b
 habit 1 21b, 38b, 82a, 146a, 236a,
 3 26b, 290a, 4 161b, 5 14a, 103b,
 235b
 fastigiate 4 103a, 5 247b
 irregular 1 16a
 volume 3 85a
 Breeding 1 22a, 136b-9, 234b,
 236b-7, 2 16b, 116-8a, 3 26b-8a,
 77b, 109-10, 202a, 4 15b, 16b-7a,
 90-1, 156, 217, 5 15-7a, 92b-6,
 165a, 175b, 194b, 235b-7, 249b,
 251a, 278a
 curly birch 2 53b
 for cellulose content 5 45a
 for vigour 1 137a
see also Cytology, Genetics, Hybri-
 dization, Provenance
 Bridge construction 1 291b, 2 68b,
 230b, 241b, 321b, 3 70b, 324a,
 334a, 4 42b, 123b, 178a, 185b,
 5 58b
 trestle design 3 240b
 Bryophytes *see* Moss
 Bud
 break 1 134a, 3 299a, 5 92b
 development 2 24a
 dormancy 3 199a, 299a, 5 92b,
 167a

Bud—*cont.*
 formation 5 15a
 Building construction 1 290a, 2 151a,
 234a, 3 69b, 156b, 240, 4 52b-3,
 123b, 244b-5, 5 43a, 58, 135b-6a,
 191b, 195b-6, 212a, 275a
 design 2 87b, 143b, 235a, 3 69b,
 333b-4a, 4 53a, 123b, 244b,
 5 196b
 dimension stock for 2 64
 doors 2 304b-5a, 3 329b
 economy 4 185b
 farm 2 241b
 fibreboard 1 168b
 maintenance 3 240a
 panels 1 288b, 2 64b, 302a
 plastics 4 237b
 plywood 1 315, 2 321a
 prefabricated 1 44b, 5 58a, 135b-
 6a, 196a
 protection 4 36a
 roofing 3 69b, 152a, 333b-4a, 4
 52b, 123b
 suitable species 2 235, 3 328b
 termite-proof 1 181a
 timber frame 3 69b, 232a, 4 242a
 timber specifications 2 154a, 4
 49a, 118a, 123b, 242a
 tools 5 196b
 tropical 2 321a
 trusses 2 234b, 3 240a, 333b-4a,
 4 244b, 5 135b, 196a
 use of wood 4 245a
 walls 2 239b, 4 123
see also Flooring, Preservative-
 treated wood
 Building slabs 5 43a, 265b-6a, 273a
 Bunching 4 37b
 Burning
 effect on
 conifer plantations 1 316,
 2 34a, 5 26a
 hardwood forest 3 211a
 land use 3 356b, 5 275b
 regeneration 1 32, 159b, 2 129a,
 206b, 211a, 295a, 3 129a,
 211b-2a, 213a, 4 25a, 163a,
 5 28a, 176b, 179b
 soil 1 78a, 229a, 2 114a, 282b,
 4 151a, 5 88b
 vegetation 1 84a, 2 158a, 197a,
 3 113b, 122b, 293a, 352a,
 5 239b
 site preparation 1 18b, 266b, 5
 251b
see also Fire
 CABLEWAYS 2 240a, 321a, 3 227,
 4 235b
 Camphor 3 238b, 4 50b
 Canes 2 66b
 Canker 1 52b, 140-1a, 142b, 295b,
 2 18, 20a, 72a, 119a, 120a, 192b-
 4a, 245b, 246b, 326a, 3 76b-7a,
 162-3a, 247a, 249b, 341a, 4 57a,
 191b, 248b, 249b, 5 139a, 276a,
 278-80a
 associated fungi 4 191a, 5 60b,
 199a
 caused by coal gas 3 158a

Canopy *see* Crown structure, Inter-
 ception
 Card-sorting methods 1 12b, 122a,
 4 32a
 Cascara 4 243b, 5 52a, 269b
 Case-hardening 1 182b, 2 310a
 Casks *see* Coopersage
 Catchment areas
 fire protection 4 54b
 management 1 79b, 86b, 232b-3a,
 3 198b, 4 153-4a, 215a, 5 13
see also Afforestation, Hydrology
 Cell contents 2 292a, 3 24b, 5 17a,
 234b
 Cell wall
 chemistry 1 276a, 2 123b, 301b,
 3 53a, 318b, 4 107a, 108b, 233a,
 5 37b
 structure 2 46a, 141b, 301, 3 50b,
 134b, 221a, 4 31a, 5 34b, 36a,
 257b
see also Wood chemistry
 Cellulose 1 45b-6a, 179a, 285b,
 2 57b, 123b, 220a, 308a, 3 53a,
 221b, 230, 320, 4 40a, 107a, 114b,
 233b, 5 34b, 36a, 37b, 122, 188b,
 257a, 264b
 fodder 4 264a, 5 214b, 264a
 formation 2 221b
 structure 4 77-80
 yield 1 179b
see also Pulp, Pulping
 Charcoal 1 45b, 48-9a, 101a,
 183b-4a, 289b-90a, 2 64a, 153b,
 234a, 314-5, 3 58b, 63b, 98b,
 148b-51, 234b-5, 328a, 4 44a,
 45b-8a, 118b, 181, 213a, 242a,
 5 49b-50, 127-8a, 135a, 181b,
 190b, 268
 briquettes 2 234a, 315b, 3 150a,
 234b-5a, 4 45a, 119a, 181b
 fossil 2 181b, 3 15a, 4 82a
 kilns 1 100b, 183b, 289b, 2 233a,
 314b-5, 3 63b, 148b-9a, 4
 45b-6, 118b, 181, 241b, 5 49b,
 127a, 190b, 268
 properties 5 50a, 127a
 supplies 3 235a
 trade 3 235b, 4 118b, 5 191a
 washing and drying 4 45b
see also Producer gas, Waste-wood
 utilization
 Chemical constituents of plants 1
 49b, 2 66b, 115b, 3 23, 106b, 154a,
 221b, 4 88b, 5 51b-2a, 90b, 94a,
 130b, 132b, 194a, 234b
 bark 1 145b, 174b, 2 31b, 3 23,
 154a, 4 15a, 5 17b, 54a, 90b,
 239a
 buds and twigs 3 199a, 5 131a
 chlorophyll 4 99a, 5 90a, 163b
 effect of hormone treatment 3
 200b
 flowers 5 164a
 fruits and seeds 3 198b, 239b,
 4 216, 5 90b, 130b, 194a, 234
 leaves 3 23a, 5 90a
 method of analysis 3 155a, 5 163b

SUBJECT INDEX

- Chem. constituents of plants—*cont.*
 needles 1 145a, 4 15a, 5 234a
see also Alkaloids, Cellulose,
 Growth-regulating substances,
 Lignin, Oils, Tannins, Wood
 chemistry
- Chemicals for treating trees
 injection 1 223a, 4 154b
 injury from 4 187a
 reducing moisture loss 4 27b
 prolonging dormancy 4 217a
see also Disease control, Weed
 Killers
- Chemicals for treating wood
 bending 2 148b, 308a
 bleaching 2 225a, 309b
see also Preservatives, Seasoning,
 chemical
- Chicle 2 238a, 5 133a
- Chipmunk 2 128a
- Chips and chipping 2 67a, 3 141a,
 4 45a, 114b, 176a, 184b, 5 121b-2,
 265b
- Chlorosis 2 119a, 5 234a
see also Deficiency, nutrient
- Choice of species 1 33b, 254b-5a,
 2 35a, 131a, 208b-9a, 295a, 3 43a,
 212, 297b, 4 101a, 166a, 5 28b,
 109b, 176b, 249b-51
- Christmas trees 2 319a, 3 154a,
 238a, 4 243b, 5 130b
- Chromosomes *see* Cytology
- Chutes 1 185b, 2 68a, 3 227a
- Cinchona *see* Quinine
- Cleaning 2 42b, 3 130a, 304a, 4 28b,
 228b, 5 251b
- Climate 1 80a, 126-8a, 227-8, 2
 125a, 3 102a, 113b, 194a, 298a, 4
 13-14a, 136b, 218b, 5 87a, 168b
 measuring instruments 5 87a,
 159a
see also Microclimate
- Cocoa cultivation 2 254b, 3 332b,
 4 51b
- Communal forests 1 109b, 199a,
 304b, 2 254, 277a, 334b, 3 90b-1a,
 181b, 4 199b, 5 148a, 291b-2a
 afforestation 5 291b
- Competition
 antibiotic effects 4 23b, 5 198b
 between seedlings and mother
 tree 5 247b
 in mixed stands 1 29b, 4 228b
 in pure stands 3 120a
 response to trenching 2 14a
 root 1 86a, 91b
 weed growth 2 32a, 214b
- Compost 1 77a, 263b, 3 21a, 103b-
 4a, 4 87a
- Compression wood *see* Reaction
 wood
- Cones
 abnormal 3 28b, 4 17b
 development and growth 1 237a,
 256b, 2 16a, 118a, 3 107, 4 25b,
 155b, 5 92b, 176b
 disease 5 198b
 morphology 2 24a
 morphological distribution 1 82b
 production 4 226a
see also Seed
- Conferences
 agricultural 5 7b-8
 forest society 5 230a
- Connectors, timber 1 44b, 185b,
 2 241b, 3 156a, 4 52b-3a, 123b,
 245b, 5 58b, 273b
- Conversion, silvicultural
 conifers to hardwoods 3 38b
 coppice to high forest 1 32a, 86a
- Cooperage 2 148a, 3 141b, 4 233b,
 5 58b, 119a, 186a, 190a, 191b-2a
- Co-operatives 1 109a, 304b, 306,
 2 82b, 166, 254b, 331a, 3 88a, 91b,
 178a, 265b, 4 64b, 199b, 262a,
 5 68b, 146a, 207b
- Coppice
 control 1 267b, 2 206, 215a, 4
 168b, 227b, 5 79
 decay 5 59b
 growth 2 191a, 3 42b, 289b, 5
 248b
 management 4 167b, 5 235b
 vigour 1 81b, 5 59b
- Cordwood *see* Fuelwood
- Cork
 Brazilian 3 331b
 decay 5 61a
 from conifers 3 237b, 4 183a,
 243a, 5 193b
 grading 4 183a
 review 3 237b
 substitutes 4 121a, 5 141a
- Cork oak
 bibliography 5 84a
 distribution 4 121a, 5 22b
 growing and tending 1 49b, 270b,
 3 153b-4a, 4 243, 5 51b, 192b
 uses 5 84a
- Costs
 milling 5 210b
 pulpwood logging 3 224b-5a
 timber production 3 152a, 5 210b,
 290b
- Cross-cutting 1 178a, 3 225b, 4 37a
- Crown
 area 3 350b
 density 1 32a, 54a, 5 209b
 development 1 23a, 245a, 2 24b,
 205a, 3 175b, 4 63b, 5 247b
 measurement 2 196b
 ratio 1 56a
 structure 1 300b, 5 27a
 types 4 225a, 5 238b
- Cultivation, soil 1 15b
 effect on
 growth 2 209a, 295b, 3 25a,
 4 25a, 214b
 natural regeneration 1 33, 254b,
 3 123, 212b, 300b, 4 24b,
 100b
 soil moisture 3 123b
 ploughing 3 43
 tools 2 36a, 131b
- Cytology 1 236b, 2 16b, 117, 283b,
 288a, 3 26b, 27b-8a, 111a, 4
 16b-7a, 90-1a, 156a, 217a, 5 95,
 96b, 165b-6a, 172a
 chromosome size 4 92a
 meiosis 4 17a, 5 16b
- Cytology—*cont.*
 polyploids 2 117b, 283b, 3 26b,
 109a, 4 16b, 90b-1a, 156a,
 5 93, 236a, 237a
see also Hybridization
- DAMPING-OFF 1 104a, 188a, 263a,
 2 136b, 3 74b, 164b, 249a, 340a,
 341a, 4 55b, 166b, 189b, 247a-8,
 5 61a, 267b
see also Nursery diseases
- Day length *see* Photoperiod
- Decay
 aircraft 5 184a
 biochemistry 2 222a, 3 53b, 4
 216b, 234b
 buildings 1 95a, 2 61a, 3 321a,
 4 189a
 cordwood 3 53b
 logs 2 60b, 63b, 145b, 303b, 3
 240b, 4 41b,
 resistance to 1 175b, 176b, 2 222b,
 4 171b, 5 37b-8, 116a
 submerged wood 5 259b
 timber 1 47b, 175b-7a, 247, 2 18a,
 51b-2, 143b-5, 222, 227a, 303a,
 3 35a, 53b-4a, 137a, 143a, 148b,
 222a, 223b, 230a, 321a, 322b,
 4 36a, 95b, 109b, 116a, 171,
 216b, 234a, 239a, 5 37b-9,
 116b-7, 184a, 217-28
 effect of electricity 2 145a
 effect of moisture 1 95b, 2 144a
 effect of specific gravity 1 95b
 effect of sugar 3 53b
 effect of temperature 1 181a, 2
 144b
 microscopic studies on, 1 175b,
 2 223a, 5 224
 trees 1 85a, 103b, 142b, 166b,
 189a, 238a, 241b, 243b, 2 19a,
 119b, 121b, 222a, 284b, 285b,
 304a, 3 53b, 55b, 73b, 312, 339,
 4 127a, 171b, 188b, 220b, 5 20b,
 60a, 139b, 198b, 279a
 brown rot 2 303a
 butt rot 1 243a, 312, 2 18b, 3
 75b, 161b, 4 127a, 5 60a,
 279a
 conk rot 1 166b
 heart rot 1 85a, 143a, 188b,
 238a, 2 121b, 3 77a, 137a,
 230a, 338b, 4 127a, 189a,
 191a
 mode of infection 3 312a
 oblique wood rot 1 241b, 4 249a
 pecky cypress 1 140b
 piped rot 3 163b
 pocket rot 2 18a, 3 75a, 339a,
 5 60a
 red rot 3 340b, 4 56a, 5 198b
 top rot 2 284b, 285b
 white rot 1 295b, 2 303a, 5 20b
see also Dry rot, Durability,
 Fungus diseases, Preservation
- Deer
 bark-scaling 1 104b, 2 29b
 browsing 2 328b, 4 21b-2a, 5 62a,
 140b, 174a
- Defective logs 3 55b, 5 260b

SUBJECT INDEX

Defects 1 280a, 2 53b, 3 305b, 5 184b
 checks 2 145b, 4 49a
 cross grain 2 54a
 detection 2 146a, 3 55a
 kiln drying 4 43b
 knot holes 2 305b, 4 36b
 loosened grain 2 306a
 radial streak 4 172a
 ripples 3 313a
 shakes 1 44a, 172a
 spiral grain 1 272b, 3 313b, 4 110b, 172a, 5 181a
 splits 4 43b, 49a, 169b
see also Decay, Reaction wood, Stain
 efficiency nutrient 1 22b, 132a, 231b, 2 284a, 69b-70a, 119a, 322a, 3 71a, 158a, 241b-2a, 258a, 4 124, 161b, 186b, 5 136b, 274b

Defoliation
 artificial 2 286b, 4 249b, 5 167a
 by natural agencies 1 141b, 296, 2 19b, 20b, 286b-7a, 3 242a, 341a, 348a, 4 59b, 130a, 192b, 251, 5 63b-4, 141a

Defoliators 1 154a, 2 22a, 28, 75b, 195, 286b, 328b, 330b, 3 82a, 84a, 165b, 169b-70a, 255a, 348a, 4 60b, 130, 160, 193b, 250b, 252a, 5 64a, 66b, 141b, 202, 284b

Dendrochronology 2 300b, 3 41b, 85b-6a, 173b, 260b, 349b-50a, 4 134b, 137a, 196a, 258a, 5 109a, 144a, 213a, 287b

Dendrometer measurements 3 85a, 111a, 209b, 4 24a, 5 67a

Diameter
 class distribution 1 196b, 2 76b, 79b, 3 87a, 179a, 4 136b, 5 167a
 diurnal changes 3 111a
 effect on timber quality 3 350a
 estimation from stump measurements 3 258b
 measurement
 calipering 1 191a, 5 286a
 instruments 4 134a, 5 143a
 "rounding-off" 4 134a
 relation to height 2 249a, 3 171a, 350b
 top diameter 4 62a

Dictionaries
 forestry terms 1 223b, 2 180a, 3 189a, 5 229b
 plant names 3 14a, 189b
 scientific terms 1 223b

Die-back 1 238b, 2 245b, 285a, 3 75b, 258a, 341b, 4 126b, 246a, 250a, 5 21a, 199a, 276a, 277a, 280a

Discoloration of wood 1 100a, 5 126a
see also Stain

Disease
 control by chemical injection 2 68b, 245b, 3 71b, 76b, 162a, 4 56b-7a, 127, 188a, 249b, 5 200a, 280b
 control by legislation 5 140a, 275b-6a
 importance 2 245b
 quarantine 5 61a, 276a

Disease—*cont.*
 resistance 1 137b-8a, 242b, 2 19b, 120a, 191a, 246a, 3 77b, 160b, 4 16b, 249a, 5 140a, 236a, 278a
 silvicultural control 5 138a
 survey 1 189b
 textbook 2 86a
see also Bacterial diseases, Decay, Fungus diseases, Virus diseases
 Disorders due to complex or unidentified causes 3 84b, 171b, 240a, 4 188b, 245a, 5 136a, 196a
 Distillation and distillation products 1 289a, 2 232b, 313b-4a, 3 18a, 148b, 234b, 4 12a, 44-5a, 118b, 181a, 213a, 241b, 5 49a, 50b, 126, 190b-1a, 271a
see also Acetone, Alcohol, Charcoal
 Distribution and natural range 1 25, 54b, 85, 146a, 2 198a, 3 113b, 203a, 292, 4 157a, 159a, 197a, 218b, 5 99b, 105a, 158, 167b-8, 239a, 242b
 endemism 3 31b, 5 243b
see also Geographical Index, Species Index
 Dormancy 3 40a, 199a, 4 25b, 217a, 5 164a,
see also Buds, Seeds
 Drainage 2 321b, 4 123b, 215b, 261a, 5 12b, 273b
 equipment 1 185b
 work studies 2 321b

Drought
 effects 3 70a, 157b, 241b, 4 186b
 resistance 1 155b, 292a, 2 292b, 3 335a, 351a, 5 197b

Dry rot 1 95a, 2 144b, 3 231a, 4 116a, 5 37b

Durability, natural 1 43a, 95b, 181a, 276b, 278a, 2 143b, 3 53b, 137, 222, 312, 4 35b, 109b, 171, 5 37b, 116a, 183b, 225, 259a
 graveyard test 3 53b, 137a, 222a
 X-ray test 2 153a

Dutch Elm disease 1 105, 137b, 142a, 188a, 189a, 240b, 242b-3a, 267b, 2 21, 73a, 122a, 194b, 248b, 285b-6a, 327a, 3 79, 163b-4a, 250b, 4 57b-8, 127b-8a, 154b, 188b, 191b, 5 61a, 62a, 91b, 137b, 138b, 200a, 281a

Dyes, natural 5 54, 133, 195b, 272a
 species as sources of, 3 237b, 239b, 4 121b

EARLY and late wood 1 173b, 2 45a, 46a, 4 53a

Earthworms 5 160b

Ecology, animal 1 152a, 249, 3 117b, 295b, 4 224a, 5 18a, 108a

Ecology, plant 1 137a, 149a, 2 14a, 3 113b, 4 19b, 218b, 5 18a, 99a
 antecology 1 26, 2 24a, 33b, 3 208a, 293b, 4 22a, 93b-4a, 5 98a, 239b
 measurements 1 146a, 148a, 2 197a, 3 34a, 5 159a
 methods 2 124b, 3 114b, 4 95, 5 17b, 99a

Ecology, plant—*cont.*
 synecology 1 24a, 25b, 82b-3a, 146, 147b, 149a, 246b, 2 124b-5a, 167b, 197, 3 33a, 114b, 119a, 4 18b, 23b, 93a, 98a, 220, 5 30a, 99b, 241-2
 tropical 3 291a, 5 17b, 18a, 239b

Economics, forest 1 56, 86a, 107, 110a, 177a, 197, 205a, 301b-3, 2 82a, 92, 174, 253, 266, 277b, 279a, 333a, 339, 3 65a, 102b, 197, 260, 5 69, 71a, 204a, 209-10, 289-90
 amortization 5 287b
 bibliography 3 278a
 expectation value 5 290a
 influence on policy 4 138b
 interest 2 82a, 3 263a, 4 65a
 overheads 2 252a
 profitability 1 107b, 3 91a, 4 259a, 5 69a
 soil expectation value 1 56a, 303b, 5 290a
 soil rent 2 333a
 theory 1 107a, 303a, 311b, 5 289a, 290a

Edible plants 5 130b, 194a
see also Fruit, Nut crops

Education, forestry 1 12b, 72, 2 276b, 3 15a, 190b, 4 10b, 5 71a, 230b

Elk damage 1 104b, 296a, 5 200b

Embryology
 insect 3 206b, 4 97b
 plant 1 137b, 143b, 2 123b, 288a, 3 28b-9a, 289a, 290a, 4 17a, 89a, 90a, 92a, 93a, 5 15a, 22a, 97a, 237b

Engineering, forest 1 185b, 291b, 2 68, 241b, 321, 3 70b, 156, 240, 333b-4, 4 52b-3, 123b, 185b, 244b, 5 58, 135b, 195b-6, 272b

Entomology 1 28, 85b, 152-5, 201b, 249b-51, 2 22a, 30a, 127b, 3 96a, 206b, 4 159b, 193b, 223b, 224a, 5 71a, 84b, 245a
 cocoons 5 108a
 diapause 4 22a, 5 107a
 embryology 3 206b, 4 97b
 experimental methods 2 154b, 202b, 4 22a, 59a, 97b, 224a
 geotropism 5 107b
 identification keys 1 250b-1, 3 117b, 4 224b, 5 246a
 larvae 2 29b, 3 117b, 4 159b, 160a, 224b, 5 107a, 173b, 244, 245b
 morphology 3 206b
 parthenogenesis 4 97b
 pupae 1 154b, 3 38a
 sampling methods 4 130b
 symbiosis 3 38
 systematic and biological studies
 Diptera 1 296a, 2 128b, 3 38a
 Coleoptera 1 154, 191a, 249b-51a, 2 291b, 292, 3 117b, 4 22b, 160b, 5 25a, 107b-8, 173b-4, 244-5
 Hemiptera 1 250b-1a, 3 38, 4 22a, 193b, 5 108b, 174b, 245b

SUBJECT INDEX

Entomology—*cont.*

Hymenoptera 1 154b-5, 251b, 2 23a, 28, 29b, 127b, 128b, 3 117b, 4 97b, 188b, 5 107b-8a, 245a
 Isoptera 1 28, 251, 2 146a, 5 25b
 Lepidoptera 1 28b, 2 28b, 3 171a, 206b, 295b, 4 22b, 133b, 160, 5 107a
see also Insects, Insect pests, Parasites, Predators
 Enumeration surveys 1 52a, 233b, 2 249a, 3 85, 193a, 4 195a, 5 146, 151-4
 accuracy 2 76b, 3 85a
 block-line method 1 300a
 continuous inventory 2 252b
 costs 1 191a
 natural stands 2 252a, 3 299a
 methods 2 162b, 3 262a, 4 195b, 5 143b
 sampling error 1 195a, 4 63a
 sampling intensity 5 66a
 sample plot data 2 331a, 3 175a, 5 67, 206b
 strip 1 195a, 5 66b, 205b
 tally sheets 2 252a, 3 85a, 4 63a
see also Aerial photography, Geographical Index, Surveys, forest
 Epicormic growth 2 294a, 299b, 3 120a
 Epiphytes 4 55a, 246b
 Erosion 1 19b, 79b, 111b, 133, 233a, 306a, 2 9b, 115b, 187b, 197a, 283a, 3 22b, 105-6a, 197b, 287b-8, 4 84a, 88a, 152, 197a, 5 72a, 162b
 control 1 20a, 78b, 102a, 133, 186a, 192, 232b, 265b, 2 68b-9a, 188b, 239a, 3 21b-2, 106a, 351a, 4 15a, 139a, 152b, 5 13b, 54b, 89b, 146a, 163a, 179a, 233b
 measurements 3 288b, 5 13a, 233b
 river 1 20b, 3 289a
 water 1 19b-20b, 2 68b-9a, 115b, 260b, 3 106a, 4 88b, 5 13a, 162b-3a
 wind 3 288a, 4 88b
 Evaporation 1 227b-8a, 3 287b, 4 14a, 153b
 Exotics 1 18a, 19a, 111, 255a, 265b, 2 35b, 208b-9a, 295a, 3 38a, 119a, 296b-7, 5 249b
 acclimatization 1 254b
 conifers 1 28b, 165a, 3 207a, 303b, 5 109b
 deciduous trees 2 129a, 3 299b, 5 175a, 176b
 disease 3 296b
 eucalypts 3 128a, 207a, 298a, 5 109b, 249a
 naturalization 4 161a
 trials 3 296b, 4 98b, 161b, 5 31a, 174, 250
 Explosives from wood 4 242b
 Extension services 2 255a, 5 68b

Farm forestry and woodlands 1 109b, 200a, 266b, 306, 2 65b, 81b, 139a, 165b-6, 255, 331-2a, 3 58a, 353a, 4 64a, 137-8a, 184a, 263, 5 68b-9a,

Farm forestry and woodlands—*cont.*
 73a, 149b, 185a, 207, 292b
 economics 2 81b, 166b, 4 263a, 5 290b
 management 1 308b, 2 331-2a, 3 88a, 353a, 4 257a, 5 145b, 207b-8a
 planning 1 302b, 2 165b, 3 178a, 261b, 4 263a, 5 288a
 Fasciation 3 111b, 5 166a
 Felling 1 281a, 2 147a, 223b, 318a, 3 56a, 314b-5a, 4 37a, 235, 5 118a, 185a, 261a
 efficiency 3 225, 5 261b
 season 1 177b, 2 306a, 3 139b
 snags 3 337b
 trestle 3 315a
see also Logging, Slash disposal, Stump removal
 Fences 2 242a, 3 343a, 4 102b, 250b
see also Protection
 Fence posts 1 47a, 278a, 2 64a, 153, 313a, 3 82a, 175a, 222, 326a, 328b, 4 239b, 5 48b, 69a, 125a, 180b, 183b, 189b, 269a
 Fertilization *see* Pollination
 Fertilizers 1 17a-8a, 77, 90b, 132, 231b-3a, 2 14a, 41b, 115a, 119a, 137a, 187b, 204a, 282b, 298b, 318b, 3 21, 103b-4, 195-6, 286, 4 14b, 23b, 85a, 86b-7, 151b, 215a, 227b, 5 12, 88b-9a, 111b, 161b
 ammonium sulphate 1 232a, 2 282b, 3 196
 basalt 1 17b-8a, 4 14b
 basic slag 2 14a
 boron 5 89a
 calcium 1 77b, 86a, 2 14a, 3 104, 124a, 157b, 195b, 4 215a, 5 88b
 chlorate 4 215a
 magnesium 1 132a, 2 14a, 282b
 manganese 2 119a
 nitrogenous 1 18b, 232a, 2 137a, 282b, 3 21a, 104a, 196, 4 87a
 NPK 1 77b, 2 41b, 3 21b, 196a, 286, 4 23b, 5 111b
 phosphates 1 132b, 231b, 2 187b, 4 14b, 5 89a
 potash 1 132a, 2 137a, 3 104b, 5 88b
 rock meal 2 115a
 trace elements 3 258a
 wood ash 2 318b
 Fertilizing 1 17b, 77, 132, 2 14a, 4 85a, 103a, 151b, 215a, 5 89a, 233a
 acidification 1 18a
 deficiencies caused by 3 157b
 effect on manganese uptake 1 90b, 5 12b
 nursery soils 1 18a, 77a, 90b, 132a, 162b, 255b, 263b-4, 2 41b, 137a, 298b, 3 103b, 104b, 195a, 4 103a, 5 12b, 111b, 161b, 178b
 ornamentals 4 227b
 Fibres
 identification 1 172a
 for textiles 4 52a
 screening 4 114b, 5 122a
 sources of 5 55a, 134b, 272b

Fibreboard 1 96b, 99b, 168b, 2 57a, 225a, 3 139a, 318b-9a, 4 38b, 114a, 148a, 175a, 212b, 237a, 240a, 5 44a, 263a, 265a, 272b
 resistance to fungi 2 225a, 3 319a
 resistance to moisture 2 225a
 tests 1 97b
 Figure in wood 1 177a, 2 53b, 128a, 219b
 Finishes, wood 1 178a, 2 276a, 3 320b
 effect of insecticides on, 3 321b
 Fire, forest 1 186, 292b-3a, 2 242a, 3 159a, 4 246a, 5 274b-5a
 behaviour studies 2 71a, 323a
 caused by lightning 5 59a
 effect on
 growth 4 125b
 insect attack 5 173b
 soil temperature 1 51a, 2 70a
 vegetation survival 2 70a
 insurance 1 187b, 2 72b, 3 245b
 manual 5 136b
 rate of spread 1 294a, 3 336a, 338a, 5 198a
 season 4 246a
 silvicultural tool 1 187a, 4 54b, 5 32a, 251b
 statistics 1 186a, 292b-3a, 2 323a
 sun-spot correlation 3 323b
 Fire damage 1 187b-8a, 2 196a, 244b, 3 73b-4a, 160a, 245b, 4 125, 246b, 5 86b, 144a, 179b, 198a, 275b
 salvage 5 259b-60a
 Fire danger
 after logging 2 324b
 fuel types 1 294a, 2 156a, 323a, 3 158b
 meteorological factors 1 128a, 227a, 2 70, 72a, 157b, 244a, 3 72a, 242, 336a, 4 125a, 187a, 5 198a
 of producer-gas vehicles 3 159a
 rating systems 1 186b, 187b, 293a, 2 70b-1a, 156a, 157b, 243, 323b, 325a, 3 72a, 158b, 335b-6a, 4 124b, 187a, 5 136b-7a, 275a
 topographical factors 3 242a
 visibility indicators 1 293a, 3 243b, 5 137a
 Fire detection 2 156b, 244a, 3 73a, 159a, 244, 4 54b, 187b, 5 59a
 communication systems 1 103b, 2 156b-7a, 3 73a, 243b, 336b-7, 4 246a
 look-out towers 1 103b, 2 72a, 3 244a, 337a
 maps 1 293b-4a
 Fire fighting
 aircraft, use of 1 187b, 2 156a, 4 187b
 back firing 3 324a
 coordination 3 245a
 equipment 1 103a, 186b, 293b-4a, 2 71b, 157, 242b-3, 324, 3 159, 244b, 337, 4 125a, 188a, 5 137a
 handbook 4 124b
 methods 1 103a, 2 158a, 244b, 3 245a, 4 187b

SUBJECT INDEX

Fire fighting—*cont.*

- parachute jumping 2 324a, 3 73b, 5 275a
- radio equipment 1 103b, 2 156a-7, 3 159a, 243b, 336b-7a
- training 2 71a, 158a, 244b, 3 245a, 338a, 4 54b

Fire protection and control 1 51b,

- 103, 187, 293, 2 70b-2a, 242-4, 324-5a, 3 71b-3, 177b, 181, 242b, 4 54b, 65a, 124b-5a, 187b, 197a, 5 59a, 137a, 197b, 207a
- finance 2 334a, 3 336b
- legislation 3 90a, 181, 265b, 336b, 4 65b, 5 212b
- planning 2 242b, 3 336, 4 125a
- public relations 2 244b, 3 243
- spark arresters 2 156b
- use of

- dogs 2 72a
- fire 4 54b

Firebreaks

- chemical clearing 1 52a, 103b
- construction 3 159-60a, 244b, 337b
- shrubs for 4 187b
- trees for 1 126b, 2 325a

Fireproofing 1 99b, 2 146b, 230a,

- 3 62b, 147a, 232b-3a, 326, 4 43a, 117, 179b, 240a, 5 267
- plywood 3 313a
- tests 2 61a, 230a, 312a, 4 179b, 5 39b, 48b
- with chemicals 3 147a, 232b-3a, 326a, 4 43a, 240a, 5 125a
- corrosion effects 4 179b
- with synthetic resins 3 232b
- wooden buildings 1 99b

Fire-resistance of trees 3 160a

Fire-resistance of wood *see* Wood properties, thermal

Firewood *see* Fuelwood

Fish poisons 2 155a, 236b

Floating and rafting 2 54b, 156b, 3 17a, 227a, 4 111a, 5 261b

Flood control 1 19b-20, 51b, 102b, 109a, 232b, 305b, 2 180a, 188b, 283a, 3 198a, 4 154a, 215b, 5 233b

Flooring 1 44b, 47b, 2 239b, 3 17b, 65a, 152a, 220b, 224a, 311a, 4 48a, 110a, 123a, 147b

- borer attack 2 311a
- standards 3 237a
- tests 3 311a

Floras

- guide to 5 18b
- see also* Geographical Index, Species Index

Floral morphology 2 24a, 3 30a, 5 104b, 167a, 239a

Flowering

- abnormalities 2 190b
- cauliflory 5 167b
- in brood-leaved trees 4 93a, 5 109a
- in conifers 1 245b, 3 107, 4 15a, 221b
- effect of rainfall 2 288b
- induced 2 116a

Flowers

- abnormally hermaphrodite 2 196b, 3 30b
- sterility 3 199b

Fodder trees and shrubs 2 33b, 239a, 320a, 3 90a, 332b, 4 120b, 123a, 184a, 5 54b, 133b, 195b, 270a

Foliage

- appearance 5 26a
- decorative 2 319a, 3 238a
- phyllotaxy 5 22b
- sampling 3 113a
- weight 1 245a, 3 175b, 4 135b, 5 27a, 90a, 91b

Foliar analysis 1 17b, 145a, 251a, 2 115a, 3 285a, 4 86b, 5 90a

Forest administration 1 56a, 72a, 2 80, 257, 3 179-80, 257, 4 65, 138, 198, 260-1, 5 69, 145b, 210

Forest history 1 13b, 73b, 207a, 224a, 2 9a, 181a, 276b, 3 38a, 96b, 176a, 177a, 191a, 296a, 4 11a, 81b, 139a, 198a, 212a, 262b, 5 8b, 207a, 290a

Forest influences on

- climate 1 80a, 101a, 108a, 2 169, 3 102b, 4 66a
- melting snow 4 215a
- soil 1 292a, 3 19b, 4 66a
- water relations 1 19b, 2 15a, 115b, 187b, 3 101a, 198b, 288b, 4 85a, 152a, 215a
- wind 2 113a
- see also* Erosion, control

Forest law 1 57, 108b-9a, 199a, 303b-4a, 2 81, 164, 334b, 3 90, 180b, 265, 355b, 4 65b, 139a, 199a, 261b, 5 71b, 147b, 212b, 291b

protection laws 1 316, 4 261b, 5 136b, 273a, 276a

Forest ownership 1 199a, 304b, 2 81b, 109, 3 90b-1, 181b, 264, 4 65b, 139b-40, 144, 199b, 262a, 5 71b-2a, 147b, 148b, 212b, 291b

Forest prehistory 1 224a, 2 7a, 109-10a, 181-2a, 3 15, 96b-7, 191-2a, 4 11, 82, 212a, 5 8b-9a, 85b-6, 155b-6a, 230b-1a

Forest products and their utilization 1 40-51, 93-102, 113, 168-85, 211, 270-91, 314-5, 2 43-68, 90, 140-56, 172, 217-42, 264-5, 300-21, 339, 3 48-70, 89b, 131-56, 218-40, 306-34, 4 29-53, 105-23, 168-85, 229-45, 5 33-58, 113-36, 145b, 155b, 180-96, 256-73

bibliographies 1 168a, 3 139b

economics 3 58a

improvement 4 52b

in industry 2 217a

regional survey 2 225a

research 1 270b, 2 140a, 4 168a, 5 256a

textbooks 4 29a, 229a

see also Timber trade, Wood, etc.

Forest regions *see* Geographical Index

Forest types 1 31a, 246a, 2 7b, 8b, 25, 125b-6a, 198b-9a, 289a, 3 114b, 204, 292b, 4 18b, 94b-5a,

Forest types—*cont.*

- 157b, 219b-20a, 263b, 5 18, 20, 239b, 240b-1, 288b
- alpine 4 19a
- boreal 4 18a, 93a
- coniferous 1 148b, 150a, 2 111b, 3 31a, 34a, 5 20a
- deciduous 1 82b, 2 288a, 3 117b, 4 162a, 5 20b, 102a

kurmis 5 20a

mesophytic 1 148b, 2 124b, 3 30b, 32b, 4 94b, 5 103a, 240b

montane 1 83a, 4 19a

rain forest 1 24b, 53b, 82b, 146, 3 114a, 211a, 304a, 4 157b, 261a, 5 18a

relic 1 125b

savanna woodland 3 114b, 4 19a, 199b

swamp forest 1 147a, 5 102b

tropical 1 148a, 2 288a, 3 318b, 332b, 4 157b, 5 293a

xerophytic 3 194b, 4 94b, 5 241b

see also Species Index, Vegetation types

Forestry

bibliographies 2 276a, 3 95a, 189a, 4 10a, 81a, 147a

handbooks, leaflets 2 198b, 203a, 208a, 3 46a, 214b-5a, 303a, 4 26b

textbooks 1 309b, 3 14a, 203b, 5 7a

Form, stem 1 21b, 23b, 40b, 105b, 192b, 2 77b, 3 171a, 4 29b, 90b, 161b, 5 14a, 17a, 92a, 103b, 247b, 286a

developed from branch cuttings 5 92a

lean 2 205b

quotient 5 286b

stability 4 217a, 5 17a

see also Branches habit, Growth habit, Taper

Fossil wood 2 109b-10a, 3 97a, 192a, 4 232a, 5 8b-9a, 24b, 85b, 155b, 231a

see also Charcoal, Forest prehistory

Frost 1 15a, 20b, 126a, 128b, 186a, 2 113a, 3 19b, 208b, 4 124a, 153a, 5 257b

artificially induced 4 245a

damage 1 242a, 3 156b-7a, 203a, 4 53a, 186, 227a, 245a, 250b, 5 136a, 197a, 274a, 276a

prevention 3 157a, 241a, 4 124a

effect on

blue stain 5 198a

insect larvae 3 168a

heaving 1 76a, 2 242a, 3 157b, 215a, 5 178b, 273a

resistance 1 240a, 155b, 2 204a, 292a, 3 40b, 157a, 335a, 351a, 4 99a, 245a

bibliography of 1 251a

susceptible species 5 58a

Fruit

development 5 14a, 98b, 109a, 248b

edible 2 238b, 5 22b

SUBJECT INDEX

- Fruit—cont.**
 morphology 3 116, 4 218b
 parthenocarp 4 155b, 217a
see also Seed
- Fruit trees**
 orchards 5 133b
 utilization of wood of 4 51b
- Fuel forests** 1 158b, 2 185a, 208a,
 3 118b, 212b, 4 100b, 5 170a
- Fuelwood** 1 185a, 2 223b, 235b, 277a,
 291a, 318, 335b, 3 17b, 58b, 98a,
 140b, 141b, 175a, 207a, 236, 267b,
 349b, 352b, 355b, 4 48b, 120, 182a,
 213a, 5 51a, 55b, 128b, 186a, 191b
 calorific value 3 135
 costs 1 281b
 from waste 3 156a, 4 52b, 184b–5a
 methods of burning 2 64b, 235b,
 318b, 3 65b, 229a, 236, 329a,
 4 48b, 52a, 182a, 242b, 5 128b
 prices 3 267b, 4 201b
 seasoning 1 286a, 4 241b
 stacking 2 56a, 3 57a, 4 37a
- Fungi** 1 84b, 139b–40a, 149b, 247,
 2 26a, 119, 191b, 200b, 284b,
 289b–90a, 3 35a, 89b, 115a, 160b,
 205b, 4 20, 95b, 216b, 220b, 5
 20b–1a, 103, 171, 199a, 278b
 associated with insects 1 140a,
 155a, 2 74b, 128a, 194b, 222a,
 304a, 3 38b, 247, 4 188b, 5 21a,
 103a, 242b–3a
 biochemistry 2 51b, 222a, 4 234a
 growth rate 3 223a
 identification keys 3 115a, 4
 220b–1a
 host specificity 2 119–20, 290a,
 5 199b
 physiology 1 98a, 181a, 2 303a,
 5 219
 pigments 5 90b
 sampling methods 3 76a
 saprophytes 2 285a
 symbiotic 5 275b
see also Fungus diseases, Mycorrhiza, Soil, microflora
- Fungicides** 1 288, 2 73a, 159a, 245b,
 3 326b, 4 125b, 234a, 238a, 239a,
 5 111b, 123b, 189a, 235b, 275b
 aminobenzene 5 280b
 application methods 4 191a, 5 59a
 Bordeaux mixture 3 76b
 chlorobenzenes 4 58a
 creosote 4 58a
 Cu-salts 2 122a, 4 191a, 249b,
 5 61b, 198b, 275b
 helione orange 3 76a
 Na-dinitrocresylate 3 247a
 nitrophenol 5 62a
 paraffin 4 58a
 pyrogallol 5 62a
 quinone 5 62a
 sulphur 5 198b, 275b
 tests 2 326a
 Zn-sulphate 4 246a
see also Preservatives
- Fungus diseases—cont.**
 168a, 188–91, 246b–9, 5 59–62a,
 137–40a, 198b–200, 275b–82a
 control 1 188b, 294b–5, 2 72b,
 3 76–8, 161–4, 247–51a, 340b,
 342a, 4 55–8a, 126b–7, 190–1,
 247b–9, 5 60–1, 138–9a, 198a,
 200a, 276a, 280b–1
 detection 5 59a
 dispersal 3 80a, 5 281a
 effect of meteorological conditions
 4 247a
 silvicultural treatment 3 246b
- Furniture**
 borers 2 146a, 223a, 4 116b
 making 1 49b
- GALLS** 1 250a, 296a, 223a, 119a, 123a,
 287a, 3 254b, 4 59a, 60b, 190a,
 191b, 251b, 5 21a, 90b–1a, 105b,
 201a
- Game**
 birds 2 34a
 laws 3 181a
 management 2 155b, 253a, 4 198b,
 5 292b
see also Wildlife
- Genetics** *see* Breeding, Cytology,
 Hybridization
- Geology** 1 131b
- Girdling** 1 28a, 167a, 173a, 312,
 2 215b, 310a, 4 29a, 105a, 110a,
 168b, 227b, 228b, 5 77, 112b
 effect on
 borers 1 43
 starch content 1 43, 280a
 seasoning by 2 310a
 tools 3 305b, 4 105a
- Girth**
 mid-girth tables 2 76a
see also Diameter
- Glaze damage** 1 74b, 2 284b, 4
 53b–4a, 245a
- Glues and gluing** 1 96b–7, 178, 283a,
 2 56b, 307a, 3 317, 4 38–9a, 112–3,
 173b–4, 5 41b–2, 119a–20, 186b–
 8a, 262b–4a
- Glues**
 animal 1 283a, 2 56b, 5 119a
 bibliography 4 38a
 cold water 4 38a, 112b, 236b
 from wood 5 41b
 polystyrene 3 317b
 protein
 casein 1 178b, 4 112a, 236b, 5
 119b
 ground nut 4 174a
 prolamin 5 42a, 186b
 sunn hemp seed 5 186b
 stains 1 178a
 synthetic 5 56b
 synthetic resins 2 148b, 4 113,
 5 41b, 119–20, 186, 262b–3
 phenolic 1 178b, 4 38a, 5 262b
 thermoplastic 5 186b
 thermosetting 5 186b
 urea 3 317a, 4 112–3, 5 119b,
 121a, 262b
 tests 1 96b–7a, 178b
 vegetable 1 283a
- Glues—cont.**
 water-resistant 2 307a, 4 39a,
 112b–3, 173b
- Gluing**
 dielectric heating 2 227a, 307a
 3 228a, 5 121a
 methods 3 317a, 4 174a, 5 41b,
 190a, 262b
- Glue joints** 1 178b, 4 174b
- Grading**
 logs 2 55b, 147b, 156a, 3 56b,
 65b–6a, 226b, 315b, 4 111a,
 5 40b, 117b, 185b, 261b
 peeler logs 1 185a
 rules 2 240b, 3 65b, 153a, 237a,
 330a, 4 182b, 5 185b
 timber 2 55b, 240b, 305b, 3 152b,
 329b, 4 49a, 173b, 5 117b,
 191b–2a, 204
- Grafts, natural** 5 17a
see also Propagation, vegetative
- Grass** 1 27b, 2 158, 3 295a, 351b,
 4 200a
 control 1 103b
 effect on growth 1 52a, 2 158b,
 209a
 for paper 4 123a
- Grassland ecology** 1 24a, 148b, 162a,
 2 199b, 3 114b, 5 170a
- Grazing** 1 133, 159b, 290b, 305a,
 316, 2 33b, 65b, 81, 82b, 125b,
 165b, 197a, 255b, 3 22b, 123a,
 176b–7a, 267a, 351b–2a, 356b,
 4 64a, 137a, 167a, 182b, 263b,
 5 73, 129a, 178b, 192a, 213b,
 272a, 292b–3a
 effect on regeneration 2 295a,
 5 62a, 140a
 rights 2 81a
- Greenhouses**
 automatic irrigation 3 127b
 spray humidification 5 14b
 wood for 5 116b
- Green-manuring** 3 103b, 4 214b
- Ground flora** 5 209b
- Growing stock**
 assessment 2 252a, 5 287a
 description 1 300b–1a, 4 260b
 distribution 1 56a, 4 136b
 ideal 5 209b
 methods of measurement 5 209
 regulation 2 165a, 4 64a, 162b,
 5 69b, 289b
see also Stand, Yield regulation
- Growth**
 diurnal 3 209b, 4 134b, 5 26b
 elongation 5 14b, 92a
 habit 1 145b, 3 40b, 348b, 4 89b,
 5 175b
 height 4 134b, 5 289b
 periodicity 1 157
 photoperiod and 1 228b, 3 41b
 radial 1 81a, 2 33a, 4 24a, 136a
 soil conditions and 1 131b, 230b,
 2 79, 3 178b, 5 164a
 stages 3 208b–9, 5 26a
 water relations and 4 258a
 wood properties and 4 36b, 5 115a
see also Increment, Phenology,
 Rings growth, Root(s), Shoot(s)

SUBJECT INDEX

Growth-regulating substances **1**
 134-6, 234b, 237, 260-2, 291a,
 312, 2 15b, 134b, 212b-3, 3 24b-
 6a, 200-1, 4 154a, 216b, 5 13b,
 164b
 in nursery practice **1** 162, 2 134a
 natural occurrence **1** 261b, 2 283,
 3 107a, 5 175b
 seed pretreatment with **2** 131b,
 210b
 use in vegetative propagation **2** 121a
 81b, 136, 260-2, 2 40b, 134-6a,
 296b-8, 3 25-6a, 108, 127b,
 200-1, 289b, 4 16a, 89a, 154b,
 156a, 216b, 5 14, 91b, 93a, 235a
 Gums **2** 58, 66a, 237a, 3 155a, 4 121b,
 5 52a, 194a, 271
 Gummosis **2** 192a, 5 281b
 Gunstocks, wood for **3** 329b, **5** 51b,
 74a, 114a, 181a
 Gutta percha **1** 151b, 184b, 291a,
 2 238a

 HANDLES **2** 65a, **3** 152b, 234b, 237a,
 329b, **4** 49a, 114a, 231a, **5** 185b,
 191b
 Hangars **3** 334a
 Hare, control **4** 192a
 Hauling **1** 185b, **3** 56b-7a, **4** 111b-2a
 costs **3** 57b, 316b, **4** 112a
 elephant, by **2** 306a
 horse, by **4** 235b
 lorry, by **2** 55a, 147b, **3** 226b
 trolleys **2** 54b
 Heartwood **2** 52, **4** 32b-3a, 34b,
 5 113b, 257b
 abnormal **1** 44a, **3** 55b, 313b, **4**
 235a, **5** 181b
 indicator stain **2** 218b
 resistance to rot fungi **2** 52a
 toxic to rot fungi **5** 184a
 Heathland **1** 163a, 253a, 265a, **5** 249b
 Hedges
 clearing **4** 235a
 plants for **1** 262b, **2** 216b, **4** 137a
5 112b, 255b
 Height, tree
 charts **1** 105a
 curves **1** 192b, **2** 162a, 249a
 estimation from aerial photo-
 graphs **4** 62a
 measurement **1** 52b, 191a, **3** 258b,
5 286a
 static stability, and **4** 217a
 tables **1** 54b
 timber point, of **2** 161b, **3** 349a
see also Hypsometers, Increment,
 Taper
 Hemicelluloses **1** 175a, 179b, **2** 51b,
 226b, 302b, **3** 311b, **4** 34b, 233a,
 5 44b
 Honey-dew **4** 224a
 Honey production **5** 134b
 Humidity, air **3** 242b
 Humus **1** 16b, 33a, 129a, 230b, **2** 42a,
 114b, 187a, 281b, **3** 20a, 284, **4**
 25a, 51b, 86a, 151, 153a, 154a
see also Soil

Hybridization
 artificial **1** 138, 236b, **2** 16a, 117b,
 3 28a, 39a, **4** 16b-7a, 22b, 90a,
 91b, 156b, **5** 92b-6, 235b-7a
 disease resistance, and **2** 19b,
4 217b
 natural **1** 22a, **2** 16a, **3** 109a, **4**
 16b-7a, 90a, 91b
 'vegetative' **5** 165b
 Hybrids
 characters of **3** 202a
 growth of **1** 37b, **2** 191a, **3** 28a,
 109a, **4** 217b, 225a
 Hydrology **1** 19a-20, 78b-81a, 133a,
 232-3, **2** 14b-5a, 115a, 187b-8,
 283a, **3** 22b, 105a, 197-8, 287b-9a,
4 88, 152-4a, 215, **5** 13, 162b,
 233b
 measurements **2** 14b-5a, 188a,
 283a, **3** 288b, **4** 153a
 water conservation **1** 81a, 232,
2 188a, **5** 179a, 242a
 Hydrolysis, wood **1** 50b, 101a, **2**
 143a, 234b, 302-3a, **3** 151b, 236a,
 311b, 328b, **4** 35a, 48a, 114a,
 119b, 242a, **5** 45a, 46a, 50b, 115b-
 6a, 128a, 188b, 264b, 268b
 Hypsometers **1** 52b, **3** 258b

 ICE storms **1** 75a, **2** 118a, **3** 70b-1a,
 75b, 157b, 335a
see also Glaze damage
 Improved wood **1** 182b, **2** 58b, 148b,
 311a, **3** 51a, 141b-2a, 227b, 229a,
 318a, **4** 38, 113b, 174, 236-7a,
5 41b, 43b, 119a, 120b, 180a,
 186b-7, 258a, 262-3a
 bibliography **2** 307a
 impregnating logs **5** 123b, 187
 impregnating wood with
 metal **4** 174a
 oil **4** 174a
 resin **1** 182b, **2** 148b, 311a, **3**
 227b, **4** 38b, 113b, **5** 41b,
 119a, 262b
 sugars **3** 63a, **5** 258a
 Lignofol **1** 97b
 Lignostone **4** 174a
 Physcol **4** 38a
 Sorbitol **1** 181b
 veneer treatments **5** 43b
 water proofing **4** 115b
 Improvement fellings *see* Silvicultural
 systems
 Increment **1** 40a, 92b, 192b-3, 245a,
 299b-300, 301, **2** 76b-7a, 331b,
3 85-6, 174-5, 260, 350b, **4** 28a,
 134b, **5** 27a, 67a, 144, 206, 287a
 basal area **2** 76b, **4** 258b
 diameter **1** 158b, 252b, **2** 162b,
 205a, **3** 171a, 173b-4, 209b,
 350b, **4** 135a, **5** 67a, 144b
 economic **1** 299b, **4** 197a
 forecasting **1** 53a, **4** 136a, 258b,
5 144b, 206, 287b
see also Yield regulation
 height **1** 131b, 193a, **2** 77a, 162b,
 205a, **3** 86b, 171a, 175a, 209,
 350b, **4** 257b

Increment—*cont.*
 Hohenhadt mean tree **1** 192a,
 3 260a
 m.a.i. **1** 299b, **2** 331a, **4** 257b, **5**
 144a
 measurement
 accuracy **4** 63a
 methods **5** 67a
 quality **5** 287b
 value **1** 192a, 193b
 volume **1** 192a, 193b, **2** 76b, **3** 175a,
 177a, 261a, **4** 135b, **5** 144b
 weight **1** 75a, **2** 79a, **4** 135b
 Increment borer **1** 193b, **3** 85b
 Increment borings
 core preparation **1** 53a, 193a, 299b
 damage **2** 123b, 305a
 study of wood anatomy, for **3** 133a
 Indicator species **1** 230a, **3** 105a,
 178b, 354a, **4** 23b, 137a, 197b,
 5 17b
 Injection, tree *see* Chemicals for
 treating trees, Disease control
 Injuries, mechanical **2** 24a, 123b,
4 190b, 249b-50, **5** 286b
 treatment **4** 124a, 245a
 Ink disease of Chestnut **4** 191a,
 249, **5** 61b
 Insect(s)
 associated with bacterial diseases
3 163b, **4** 249a
 associated with fungi **1** 155a, **2**
 128a, 194b, **3** 80, 250b, **4** 159b,
 190b, **5** 25a
see also Dutch Elm disease
 attractants **2** 21b, **5** 24a, 173b
 ecology **1** 153b, **2** 239a, **5** 24b,
 63b, 142
 Insect pests of nurseries **2** 160b,
 286a, **4** 133b, 251a
 Insect pests of seed and cones **2** 23b,
3 124b, 254b, **5** 284b
 Insect pests of trees **1** 85b, 105a,
 152-5, 177a, 189b-91, 242b-3a,
 249b-51a, 294b, 296-8, **2** 21b-3,
 28-30, 73, 122-3a, 127b-8, 159,
 195-6a, 202, 248, 292, 327b-30,
3 38, 81b-4, 89a, 165-71, 212b,
 251b-7, 343-8, **4** 59-60, 129-33,
 192-4, 250b-6, **5** 62b-6, 140b-2,
 200b-4, 245b, 282b-6
 bionomics **1** 85b, 105a, 152-4,
 238-9a, 249b-50, 284a, 296b,
2 73, **3** 166a, 252-6, 344-7, **4**
 130, 132b, 254b, **5** 64a, 141b-2,
 201-3, 286a
 Coleoptera **1** 85b, 105, 154a,
 189b-91a, 242b-3a, 297-8b, **2**
 73b-5a, 76, 122, 202b, 248,
 292b, 329b, 330b, **3** 82b, 83b-4,
 165-7, 168b, 169b, 170b, 252,
 253b, 255-6a, 343-5, 346b-7,
 459a, 60a, 129b-32a, 133, 136b,
 160a, 193-4, 249a, 250b, 252a,
 253-5, **5** 62b-3, 65, 141b,
 284-6a
 control **1** 189b-91, **2** 74-6, 159-61,
 247-8, 328-30, **3** 83-4, 165-70,
 251b-2a, 343a, 344a, 345b,
 347a, 348, **4** 59b-60, 129b-31a,

SUBJECT INDEX

Insect pests of trees—*cont.*

133, 193–4, 251b, 252b–5, 5 24b,
141a, 283b
biological 1 190b–1a, 297b,
2 28–9a, 161a, 202, 3 84b,
117b, 343a, 347a, 4 59a, 60b,
131b, 5 64b, 141a, 201a
chemical *see* Insecticides
mechanical 3 170b
natural 1 189b, 297b, 2 74b,
159b, 329a, 3 252b, 253b–6,
345b–7, 4 254b
silvicultural 1 191b, 2 74b,
328b, 3 253b, 344, 4 131,
193a, 255b, 5 283b
Hemiptera 1 24, 298a, 2 23a,
73b, 122b–3a, 160, 203, 328b,
329b, 3 83a, 167a, 169–70a,
252b–3a, 256b, 343b–4, 347a,
4 59b, 126b, 129a, 132, 192b,
193b, 252, 5 200b–1a
Hymenoptera 1 105a, 190b, 239–
40a, 297a, 2 22a, 29a, 73b–4,
160, 195b, 202, 329, 3 82b–3,
166, 253a, 254b, 256b, 345–6a,
4 59–60, 129a, 130, 133a, 160a,
192b, 194b, 253, 5 62b–3, 64b,
141a, 284b
identification 4 192a
laboratory rearing 4 192a, 251b,
5 64a, 141a, 202b
Lepidoptera 1 85b, 105a, 154,
189b–91, 238a, 296b–8a, 2 73b–
4a, 75b, 195, 248b, 328b–30,
3 82, 83b, 165b, 168a, 169,
253–4, 256b–7, 343, 347–8,
4 60b, 129a, 130–1, 133, 135a,
194b, 250b–1, 254b, 5 63b, 65a,
66a, 141b–2, 201a, 203
Neuroptera 5 63b
Orthoptera 2 22a
Psocoptera 2 73a
Thysanoptera 4 252a
see also Borers, Parasites, Predators

Insecticides

aerial spraying 1 297a, 2 248b,
328b, 3 164b, 348a
alkaloids as 2 168a
Anobasine 2 168a
application to buildings 2 311b–2a,
4 41b
arsenical 2 75b, 159b–60, 248b,
3 164b, 254a, 255a, 343a, 4 129b,
252b, 254a, 5 141b, 202a,
282b–3a
barium salts 5 282b
carbon tetrachloride 2 311b
chemistry of 3 81a
chlorobenzenes 2 311b, 4 128b,
252a, 5 66b, 201b
chloropicrin 2 311b
contact poisons 1 52b, 295, 2 330b,
3 168a, 4 254b
copper compounds 3 343b, 5 283a
creosote 3 343a, 348a
cryolite 3 343a, 5 283a
cyanides 2 230b, 312a
damage 2 247b
derris 2 74a, 330b, 3 343a, 5 63a,
245a

Insecticides—*cont.*

Derux-T 1 189b
Detal 1 298a, 2 74a, 5 245a
dichloroethyl ether 4 252a
diesel oil 5 201b
dinitro-compounds 3 171a, 343a,
4 251a, 255a, 5 285a
Effusan 3 168a
emulsified sprays 3 169b
fluorine compounds 3 343a
Forststäubol 2 330b
injection into living trees 1 189b,
280a, 3 357b
lime-sulphur 3 81b
Lipan 1 298a
methyl bromide 4 132b
mixtures 3 164b, 5 282b
naphthalene 5 66b
natural occurrence 4 121b, 183a,
5 272a
Nemotan 1 297b, 2 74a
nicotine 1 190a, 2 168a, 3 253a,
344a, 4 193b, 5 142a, 282b–3a
pentachlorophenol 5 66b
pyrethrum 2 168a, 330b, 3 169a,
343a, 4 194b, 5 63a, 245a, 283a
Quassia 2 168a
resistance to 2 75b, 5 39b
rotenone 2 74a, 168a, 3 84a, 5
283a
sodium salts 2 160b, 4 254a
spraying 3 81b, 5 282b–3a
spreaders 3 81b
stickers 3 164b, 253a, 254a, 5
141b–2a
stomach poisons 1 295, 4 194b
tests 2 73a, 2 247b, 3 81a
Veraline 2 161b
see also Preservatives
Interplanting 2 42a, 3 123b–4a
Irrigated plantations 4 136b, 152b,
5 87, 97a

JOINTS 1 275b, 3 156a, 5 58b, 188a
scarfed 4 174a
strength of 4 174b
see also Connectors, Glue joints

KAPOK 2 66b, 239a, 4 51b, 182b,
5 55a, 134
Knots 1 244b, 2 47b, 305b, 4 36b,
5 184b, 260b

LABOUR
efficiency studies 1 33a
organization 4 102b
relations 4 261a
supply 3 263b, 4 264a, 5 69
training 5 69a
Lac 1 102b, 184b
Ladders 5 185b
Laminated wood 1 44b, 184a,
2 148b, 3 59a, 141b–2a, 227b–8,
318a, 4 113b, 236a, 245b, 5 41b,
43a, 115b, 121, 263a
arch 1 291b
chemical bending 4 115a
cog-wheels 2 56b
surfacing 3 59a
see also Beams, Plywood, Strength

Lammas growth 3 70a

Land tenure 3 264a, 5 71b
see also Forest ownership, Private
forestry
Land use 1 84a, 199b, 306, 2 8b,
82b, 165b, 180a, 254b–5, 281a,
335a, 3 91a, 106a, 176a, 178a, 182,
266b–7a, 4 136a, 196a, 214a,
199b–200a, 205–10, 262b–3a, 5
72–3a, 145a, 149a, 162b, 213,
233b, 291b–2
bibliography 4 210
classification 2 165b, 4 196a, 260a
forest reservation 2 253b
legislation 4 66a, 139b
mining 1 306a
see also Grazing
Landscape planning 2 80a
Landslides 1 292a
see also Erosion
Latex 2 320a, 5 133, 195b
see also Rubber
Leaf
anatomy 2 196b, 3 30a, 5 166b,
238a
biochemistry 2 17b
decay 4 162a, 5 171b
discoloration 4 162a
diseases 1 85a, 141–3, 240a, 2 20b,
119b, 121a, 192b–3a, 3 74b,
77b–8a, 162, 341, 4 57b, 127b,
5 61b, 138, 200a, 281b
see also Wilt
epidermis 5 166b
fall 1 223a, 2 288a, 3 208b, 238a,
morphology 1 139a, 244b, 2 124,
4 93a, 5 98b, 238a
ontogeny 4 156b
physiology 1 155b
scorch 3 71a, 340b
stomata 2 124, 5 98a, 235a
see also Foliage, Needles
Leaf-cutting ants 4 255b
control 2 75b, 3 170b
Leaf miners 1 206b, 2 22b, 73b,
3 254b–5a, 346a
Leaf rollers 1 297a, 5 204b
Leaf spot *see* Leaf diseases
Lichens 2 20a
Light
effect on
dry weight increment 1 75a
seedling development 2 204b,
207a, 5 25a, 108a
intensity 2 292a, 3 297b
measurement 1 74b, 3 101b
requirements 5 108a
Lightning
damage 2 41a, 118b, 284a, 5 136b,
197b
fires 3 160a, 5 59a, 187a
protection from 5 137a
species susceptibility 1 127b
sunspot correlation 5 59a
types 4 187a, 5 136b
Lignin 1 42b, 174b, 276, 2 10b, 51b,
67a, 141b, 221b–2a, 3 52b, 221b,
311b, 4 34b, 41a, 109a, 114b, 175b,
233a, 5 37b, 115b, 183, 188b,
258b
determination 1 283b

SUBJECT INDEX

Lignin—*cont.*
 hydrogenation 2 303a, 3 52b,
 5 183a
 in humus 4 151a
 waste utilization 5 135b
Lignite 4 242a
Litter 1 12a, 76b, 83b, 131, 230,
 2 114b, 186b-7a, 3 21a, 196b,
 284b-5a, 4 86, 151a, 214b, 5 67a,
 88b, 160b-1a, 175a, 232b
Loading 2 147b, 320b, 3 227b, 4
 37b, 112a, 5 118a
 equipment 3 226b, 4 173b
Logging 1 44b, 96a, 177-8a, 280b-2a,
 2 54-6a, 147-8a, 217b, 306,
 320b-1a, 3 56a-7, 139b-41a,
 224-7, 313b-6, 4 37b, 111-2a,
 172-3, 5 40-1a, 81, 118, 185a, 261
 arch 3 140b, 316a
 carts 2 54b, 3 316b
 co-operatives 5 207b
 costs 1 281b, 2 55b-6a, 68a, 197b,
 224a, 306b, 3 57b, 4 110b,
 172-3a
 damage 2 23b, 147a, 4 225a, 256b
 economics 5 290b
 effect on
 erosion 3 106a
 grazing 4 64a
 insect pests 2 328a
 regeneration 1 160, 4 99
 soil 4 151a
 equipment 2 224b, 4 173b
 handbook 4 111b, 5 185a
 legislation 3 181a
 lorries 1 102b, 185b, 2 67b-8a,
 147b, 320b, 3 226b, 316b
 mechanization 1 96a, 178a, 2 55a,
 67b
 organization 1 178a, 2 147b, 3
 210b, 313b, 4 110b, 172
 related to silviculture 1 28a
 roads 1 51b, 2 306b, 3 240b, 4 53b,
 112a
 safety precautions 3 263a
 salvage 1 166b, 3 305b, 5 141b,
 198a
 season 4 173a
 tractors 2 56a, 320b, 3 226b
 tools 2 306b, 3 314b
 tramways 1 96a
 waste 1 179b, 282a, 2 148a, 4 184b,
 5 55b-6a, 272b
 wheels 2 54b
 winches 1 281a
see also Bunching, Bundling,
 Cableways, Loading, Selective
 felling, Skidding, Transport
Lorries
 economics 2 156b
 load distribution 1 102b
see also Logging, Transport
Lumber *see* Timber

MALARIA control 1 305b, 4 261a
Mallets 3 237a
Mammals 1 117b, 295b, 2 128a,
 3 251b, 4 224a, 250
 effect on regeneration 3 164b,
 4 163a

Mammals—*cont.*
see also Ecology, animal, Game,
 Porcupines, Rodents, Wildlife
Management, forest 1 54-6a, 106,
 165a, 194-7, 212-3, 300-2, 310b,
 2 78-80, 85a, 92, 116a, 162-3, 174,
 266, 331-3, 339, 388, 117b, 176-9,
 261-2, 285b, 351-4, 4 64, 136-8,
 161a, 196-7, 259-60, 5 31b, 67b-9,
 72b, 145-6, 165a, 207-9, 287-8
Mangroves 1 30a, 126b, 2 115b, 125a,
 3 30a, 32a, 86b, 294a, 4 19b, 5 17b,
 193b, 234b
 bark 1 281a, 5 269b
 pitprops 4 120a
Maps, forest 1 195b, 2 251b, 5 229b
Mapping 2 78b, 3 178b, 4 64b, 138b,
 5 288b
see also Aerial photography
Marine borers 2 152a, 3 54b, 61b,
 321a, 323b, 325, 4 36, 43a, 159b,
 178a, 5 267a
Marketing
 co-operative 1 185a, 2 166a, 4
 262a, 5 214b
 bibliography 2 240b
 cordwood 1 185a
 farm-forest products 2 255b
 pulpwood 3 357b
 timber 1 109b, 110b, 2 67b, 240b,
 261b, 3 18a, 179a, 353a, 4 66b,
 257a, 260a, 5 293b
Marking
 methods 1 96a, 177b, 280b, 2 223b,
 3 314a, 4 259a
 rules 5 202a
 spray guns 1 177b, 3 56a, 4 235a,
 5 67b
 tools 2 54a, 3 139b
Matches
 timber for 2 290a, 4 236a
Mathematical methods 2 180a
see also Statistical methods
Medicinal plants 2 155a, 3 66, 332a,
 4 50a, 120b, 121b, 183a, 5 51b-2a,
 193b, 270a
Mensuration, forest 1 52-4, 105-6,
 191-3, 298-300, 310b, 2 76-8,
 161-2, 249-50, 330-1, 3 85-7,
 171-5, 258-61, 349-51a, 4 61-3,
 134-6, 194-6, 256-9, 5 66-7,
 143-5a, 204-7a, 286-7
Mice and voles 4 224a
see also Rodents
Microclimate 1 21a, 75b, 78b, 146a,
 228a, 2 9b-10a, 4 13-4a, 84a,
 5 87a
Mildew, Oak 3 78a, 4 57a
Mine timbers 1 41a, 99a, 101a, 290b,
 2 33a, 61b, 131a, 231, 235a, 260a,
 3 52a, 324, 4 27b, 43a, 48, 117a,
 120, 232b, 239a, 242a, 5 49a, 124b,
 190a, 191b
 barking 2 318a
 fire risk 3 62b
 measurement 2 64b
 preservation 3 146a, 324b, 4 239a
 strength 1 41a, 3 311a
 suitable species 1 314, 4 120a
 volume tables 3 259a

Minor forest products 1 49b-50,
 101b-2, 184b, 211, 291a, 2 31a,
 40b, 65b-6, 91, 155, 236, 3 66-8,
 153b-5, 237-9, 330-3, 4 49-51,
 120b-3a, 182b-4, 243-4a, 5 51b-
 5a, 129-34, 192-5, 269-72
Mites 2 123a, 5 107b, 285b-6a
Mixtures
 natural 4 162b
 plantations 1 258a, 4 23a, 100a,
 5 176b
 regeneration 3 124a, 5 249a
 treatment 1 32a, 253a, 2 32b, 215b,
 3 118b, 123a, 216a, 4 162b,
 167b, 228b, 5 176a, 248b, 251b
 yield 1 159a, 4 196b, 5 287a
 Moisture content of trees 2 17a
see also Wood, properties
Moles 2 128a
Molluscs, rôle in humus formation
 5 88a
Morphology, plant 1 143b-4a, 3 30a,
 5 97a
 textbook 5 13b
see also Floral morphology, Leaf,
 Seed
Mortality
 analysis of 1 140b, 162a, 252b,
 259a, 266a, 2 294a, 3 177a, 5
 26b, 33a, 175b-6a
 following logging 4 136b
 following thinning 3 210b
Moss 3 34a, 5 241b
Mulching 3 212b, 215b
see also Nursery practice
Musical instruments 4 120b
Mycorrhiza 1 19a, 76, 129b-31a,
 2 10b-11a, 113b, 186a, 3 20b, 103,
 283a, 4 14a, 85a, 87b, 150b, 214,
 5 11, 87b, 111b, 160a, 164a, 232a,
 233a, 246b
NAILS and nailing 1 94a, 3 58b,
 227b, 5 58b
Natural resources conservation 1
 307b, 2 82b, 3 89a, 176b, 181a,
 264b, 357b, 4 136-7a, 139b, 199,
 261a, 262b, 5 146b, 291a
see also Land use, Soil, conserva-
 tion
Needles
 affect of drought on 1 127a
 anatomy 1 145a, 5 98a
 chemical composition 1 145a, 4
 15a
 litter for poultry, as 2 236a
 medicinal value 5 270a
 morphology 2 124a
 resin ducts 1 145a, 4 17b
Nitrogen fixation *see* Bacterial sym-
 biosis, Root nodules
Nomenclature
 botanical 1 151b, 2 27, 126b, 201a,
 3 115b-6a, 4 21b, 96b, 222b,
 5 22a, 84a, 105a, 170b, 172a
 forest trees 2 7a, 276a, 3 95a,
 4 147a, 5 229
 forestry 1 122a, 223a
 fossil trees 5 229
 ornamental trees 5 229a
 wood 1 12b

SUBJECT INDEX

Nurse crops and species 1 162a, 266a, 2 206b, 328b, 4 23a, 28a
 Nursery diseases 1 90b, 104a, 162b, 188a, 239b, 262b-3a, 2 19b, 41, 136, 196a, 213b, 3 164b, 246b, 249a, 338b-9a, 340a, 341a, 4 55, 57b, 189a, 193a, 247b-8, 5 60b, 62a, 137b, 138b, 276
 identification key 3 44a
see also Damping-off
 Nursery practice
 area determination 2 133a
 frost heaving 5 273b
 hedges 1 262b
 insects *see* Insect pest of nurseries
 inventory 2 39b, 5 208b
 mechanization 2 39b, 133, 4 103a, 5 179a
 mulching 3 215a
 mycorrhiza 5 111b
 root pruning 2 39b, 212a, 3 46a, 4 103, 5 164b
 rotation 1 259b
 seed and transplant-beds 2 41a, 133b, 3 127b, 4 27a
 shade 2 41a, 205a, 3 215a, 4 27a, 5 175b
 soils 1 16, 77a, 78a, 132a, 263b, 3 103b, 195a, 285b, 4 23b, 103a, 150b, 5 87b
 sowing
 broadcast 1 37b
 covering 4 26b, 5 178b
 dates 2 134a, 3 127b, 4 26b, 226, 5 29b, 178b
 density 1 259b, 4 166b
 depth 1 37a
 quantity estimation 2 211b
 statistics 4 64b
 techniques 1 37b, 39a, 162b, 255b, 2 39, 133-4a, 208a, 212b, 3 214b-5a, 351a, 4 27b, 100b, 5 30a, 179a
 top pruning 1 259b
 transplanting 1 37b, 260a, 2 212b, 3 46, 4 103a, 167a, 5 178b-9a, 253a
 watering and irrigation 2 133b, 296b, 3 46a, 127b, 4 27a
see also Fertilizing, Fungicides, Planting stock, Seed, Seedling
 Nut crops 2 155b, 306a, 3 175a, 5 54a
 Nutrition *see* Physiology

OLD fields *see* Afforestation

Oils
 bark, from 2 155b, 3 68b, 4 51a
 essential 1 184b, 3 67a, 155a, 4 50b, 122b, 244a, 5 52b-3a, 132a, 194b, 271b-2a
 fruit and seeds, from 2 238a, 4 183b, 5 194b
 leaves, from 3 331b, 4 122a
 residue from saccharification 3 236a
 pine 2 238a, 4 183b, 5 194b *see also* Tung
 Oilseeds 4 50b-1a, 122b, 5 272a

Oleoresin 3 154b, 4 122a, 213a, 271a, 5 131a
 medicinal products from 4 122b
see also Resin
 Ornamental trees 1 164b, 298b, 2 42a, 214a, 3 127b, 215b, 303a, 306a, 4 162b, 227b, 5 30a, 33a, 247a, 251a, 254a, 277a
 diseases 3 303a, 5 59b, 198b, 282a, 338b
 irrigation 5 254a
 pests 4 194a, 5 283b
 wind damage 3 334a
see also Fertilizing
 Osmotic pressure 1 135a, 2 115b, 3 24b, 5 17a, 91a

PACKING containers 1 184a, 286a, 3 65a, 152a, 328b-9a, 4 48b, 5 51a, 125a, 128b, 181a
 bibliography 1 290b
 borers 4 172a
 plywood 3 141b, 4 174b, 242b, 5 190a
 wood substitute 4 182a
 Paints and painting 1 180a, 2 146b, 151b, 228b, 305a, 3 321a, 326a, 4 41a, 176b, 238b-9a, 5 48a, 124b, 189a
see also Preservation, Preservatives
 Palaeoecology *see* Forest prehistory
 Palms 2 155b, 3 333a, 4 159b
 Parasites of insect pests
 fungi 1 155a, 2 29a, 195a, 3 38, 5 66a, 201a, 283b
 insects 1 154, 155b, 189b, 250, 2 28, 74b, 127b, 159b-60, 195b, 202, 3 83b, 170a, 252b, 253b, 254b-5, 256b, 345b-6, 4 130b-1a, 132b, 160a, 5 65b, 204b, 246b, 283b
 virus 2 329a, 3 82b
 Parasitic plants 2 127a, 3 246a, 338a, 4 55a, 125b, 5 22a, 59a
 biological control 3 246a
 Particle board 5 121b
 Pasture management *see* Grazing
 Peat and peatlands 1 19a, 39a, 73a, 2 109a, 182a, 3 15b, 31a, 191b, 4 11b, 5 155b-6a, 230b
 drainage 5 12b
 peat coke 5 128a
 Phenology 1 157, 223a, 2 180b, 288a, 3 14a, 107, 208-9, 298b-9a, 4 24a, 41b, 99a, 162, 5 26b, 109a, 165a

Photography
 films 1 122a
 permanent sample plot 2 330b
 three-dimensional 5 84a
see also Aerial photography
 Photoperiod 1 155b, 228b, 235a, 2 191b, 197a, 3 26b, 39-40
 Photosynthesis 1 134b, 234a, 2 189a, 4 154a, 5 90b, 235a
 Phyllode 2 124b
 Phylogeny 2 46b, 3 219a, 4 32a, 48b, 50b, 220b, 5 165b
 Physiology, plant
 ageing 5 233b
 cell elongation 2 190a

Physiology, plant—*cont.*
 enzymes 4 154b, 216
 frost resistance 1 133b
 heat changes in stem 1 135a
 nutrition 1 29b, 86a, 251a, 2 17b, 189a, 3 23a, 298a, 5 13b, 26a, 90a, 164a, 274b
 pot-culture experiments 1 261a, 4 150b, 224b
 pollination 2 118a
 research 5 163b
 sap pressure 3 24a
 textbook 5 13b
 tropisms 2 45b
 voltage gradient in trees 4 216a, 5 90a, 142a

Piles, marine 2 232b, 3 323b, 325, 4 43a

Pipes and conduits 2 154b, 4 48b, 120b, 123b, 176a, 5 121a
see also Tanks, wooden

Pipes, tobacco 4 182a

Pitprops *see* Mine timbers

Planing machines 1 179a

Plantations
 costs 2 130a, 4 64b
 compensatory 5 109a
 experimental 1 265b, 2 209a, 3 41a, 129, 4 166a, 5 25a, 29b, 109b
 following agricultural crops 3 213a
 irrigated 1 49a, 5 30a
 pure, problems of 4 165a
 spacing 1 40, 89b, 266b, 2 131a, 205a, 206b, 215b, 3 123a, 127a, 4 27a, 102b, 5 103b, 253a
 stagnation 2 215a, 3 124a
 with agricultural crops *see* Agri-silviculture
see also Mixtures

Planting
 failures 1 28a, 2 211a
 instructions 2 211a
 machines 4 27a
 methods 1 27a, 32a, 37a, 39a, 90a, 164b, 256b, 258b, 305b, 2 133a, 296a, 3 44b-5a, 127a, 128b, 303a, 4 27a, 165-6, 226b, 5 29b, 111, 177b, 253a
 object of 3 123a
 season 3 46a
 strip 1 259a
 survival 2 32b, 211a, 296a, 3 41a
 tools 2 133a

Planting stock
 age 1 258b, 2 39a, 5 178a
 ball plants 1 162a, 3 127a, 5 253a
 bare-rooted 1 37b, 3 126b-7a, 4 163b, 5 30a, 253a
 containers 2 40a, 4 166b
 exposure 1 259a, 4 102b
 grading 1 34a, 4 227a
 quality 4 166a
 root suckers 3 214b
 size 2 39a, 4 227a, 5 178a
 storage 1 34a, 38a, 2 211a, 296a, 44b, 3 126b, 4 166b
 stumps 1 37a, 38a, 2 40a, 211b, 3 44b, 214b, 4 26b-7a, 28a, 101a, 166b, 5 29b, 178b

SUBJECT INDEX

Planting stock—*cont.*

- transport 2 296a, 3 126a, 4 228a, 5 30a, 253a
- treated with fungicide 5 111b
- wildings 1 38a, 2 39a, 3 126b, 214b
- see also* Nursery practice
- Plastics 1 284b, 291a, 2 149a, 3 230b, 318b, 4 176a, 237b, 5 41b, 43b-4a, 45b-6a, 119b-20a, 186b, 187b, 188b, 263b
- Plastic wood 2 146b
- Plywood 1 178b-9a, 184a, 283a, 2 56b, 148b, 225a, 3 189a, 228, 313a, 317, 4 112b-3a, 174a, 212b, 5 35a, 36b-7a, 42-3a, 119-21a, 187, 262
- bibliographies 3 189a, 4 38a
- deformation 2 307b, 4 236b
- delamination test 5 187a
- durability 4 174b
- exposure test 1 178b
- high-density 5 263b
- insect attack 1 153a
- joints 1 178b, 4 174a
- manufacture 1 97a, 2 225a, 3 59a, 317a, 4 38b, 112b, 5 41b, 120, 262b-3a
- moulded 5 119b-20a, 262a, 263a
- species tested 1 287b, 2 148b, 307a, 3 317b, 4 236b, 5 264a
- splicing 4 112b
- standards 3 153a
- surfacing 3 59a
- tubing 5 262a
- uses 1 44b, 3 228b, 4 49a, 53b, 174, 5 42-3a
- see also* Strength
- Podzols and podzolic soils *see* Soil, types
- Poisoning, tree 2 41a, 138b, 299a, 3 131a, 4 28b, 105a, 168b, 228, 5 32a, 78, 112b, 185a
- accidental damage 5 136b
- methods 1 267, 3 131a, 216b
- see also* Weed killers
- Poles 1 44b, 182b, 280a, 2 62b-3a, 232a, 291a, 3 175a, 323b, 324b-5, 327a, 4 117a, 120a, 179a, 5 48b, 128b, 189b, 192a
- stacking 2 65a
- testing 2 50b
- transmission pole specifications 3 153a, 4 120a
- Policy, forest 1 39a, 56-8, 108-9, 115, 197-200, 303-6, 2 80-3, 92, 164-6, 174, 253-6, 266, 334-5, 339, 3 89-92, 180-3, 264-8, 354-8, 4 65-7, 138-40, 198-201, 261-4, 5 70-1, 146-50, 211-4, 290-3
- see also* Geographical Index
- Pollen

Pollen—*cont.*

- longevity 3 27a, 110a
- metaxenia 4 91b
- morphology 2 140b, 3 30a, 5 167b
- Pollination 2 16a, 118a, 4 155b, 5 235a
- Polyploids *see* Cytology
- Poplar growing 1 38b, 160b, 231b, 240a, 2 121a, 209a, 3 40b, 86b, 211a, 299a, 4 22b, 36b, 113b, 136a, 191b, 195b, 5 138b-9, 249b, 281b
- Porcupines 3 251a, 4 250b, 5 144a
- Power-line rights of way 1 197b, 4 37a, 103
- Precipitation
- effect on
- growth 1 272a, 3 174a
- survival 5 247b
- interception 1 133a, 2 9a, 3 105a, 197a, 4 14a, 88a, 5 32b, 232a
- mist 4 14a
- rainfall 1 15a, 20b, 74a, 186a, 228a, 2 185a, 188a, 288b, 3 19a, 281, 4 149b, 5 159a, 287b
- see also* Snow
- Predators of insect pests
- birds 3 165b, 170a
- insects 1 153a, 2 190b, 202a, 3 84b, 165b, 4 22a, 59a, 254a, 255, 5 65b, 173b, 202b, 284a
- Preservation of
- Balsa 4 238b
- building materials 2 143b, 3 143a
- decking 4 42b
- fence posts 1 47a, 2 64a, 153, 313a, 3 222b, 326a, 4 179a, 239b, 5 48b, 125a, 189b
- log cabins 4 179b, 240b
- marine piles 2 232b, 3 61b, 325b
- mine timber 1 99a, 3 146a, 323b, 4 117a, 239a, 5 43a
- poles 1 280a, 3 146b, 323b, 324b-5, 4 117a, 179a, 5 46b, 48b
- sleepers 1 48a, 180b, 2 62b-3a, 232a, 313a, 3 146a, 323b, 4 176b-7a, 5 124a
- veneers 3 321b
- wood blocks 5 266a
- wood piping 4 240a
- Preservation, wood 1 46b-7, 98-100a, 180-2a, 278b, 286-8, 311b, 259-64a, 151b-3, 228-32, 310b-3, 3 61-2, 143-7a, 321-6a, 230b-2, 4 42-3a, 115b-7a, 171b, 176-9, 230b, 237b-40a, 5 46-8, 116a, 124-5a, 189, 226, 266a-7a
- bibliography 1 181a, 2 276a, 3 189a
- butt treatment 3 62a
- danger to health 1 180b
- depth of penetration 1 98b, 3 231a, 325a
- dipping 2 228b, 4 176b, 5 124a
- effect on wood properties 5 182b
- end-boring technique 2 63a
- hot and cold tank 1 288a, 5 124a
- in the forest 5 259b
- moist wood 3 143a
- open tank 2 61b, 153a, 232a, 4 176b, 239b

Preservation, wood—*cont.*

- osmotic diffusion 1 287a, 3 61a, 322b, 4 42a, 5 47a
- oxy-acetylene flame, use of 5 189b
- painting 3 230b, 4 238b, 5 124a
- pressure treatments 1 288a, 2 61b, 230b, 232, 3 62a, 146a, 230b, 323b-5, 4 178b, 5 46b, 267a
- pretreatments 2 229a, 5 46b
- Rueping process 1 180b, 2 59b, 4 117a
- spraying 2 152a, 311a, 3 325a, 4 238a
- steeping 1 287a, 4 43a, 176b, 238a, 5 267a
- tyre-tube 1 47a, 2 313a
- vacuum processes 4 238b
- Preservative-treated wood
- air-raid shelters 4 239a
- bridges 2 68b, 230b, 232b, 3 324a
- building timber 1 288a, 3 324a, 4 176a
- chemical analysis 4 177a
- failure 1 287a
- greenhouses 5 124b
- marine piles 3 325, 4 178b-9a
- mine timber 1 182a, 2 153a, 3 324b, 4 117a
- painting of 3 321a, 4 176b, 5 46b
- piles 2 232b, 5 48a
- pipes and drains 4 176a, 240a
- railway trucks 3 322a
- reservoir roofs 2 230b
- road construction, in 3 324a
- sewers, in 5 46a
- sleepers 1 48a, 180b, 2 62a, 230b-1, 3 62a, 65a, 323b, 324b, 4 109b, 5 48a, 259a, 266a
- statistics 2 60b, 228b, 4 177a, 5 266
- standards for 3 326a
- tests 1 98b, 180a, 181b, 287, 2 153, 222b, 3 145b, 322a, 4 116b, 177a, 178-9, 239a, 5 48
- transmission poles 5 46b, 128b
- see also* Fence posts, Poles
- Preservatives 1 180a, 286, 2 229, 3 231, 322, 4 116 5 47-8, 124b, 189b, 267a
- alkali chromates 1 98b
- arsenical 1 181b, 278a, 2 60a, 152a, 3 144a, 146b, 232b, 322b, 4 238b, 5 259b
- Ascu 1 287a
- barium chloride 5 189a
- bibliography 3 189a
- Boliden salts 3 322
- boric acid 1 99a, 289a, 2 152a, 229b, 3 61b, 4 36a, 5 46b
- cadmium nitrate 5 189b
- Carbokrimp 1 278a
- chlorobenzene 2 311b, 3 145b
- chloronaphthalene 3 145b, 232a
- chlorophenols 1 95b, 181b, 2 61b, 151b, 229, 3 62b, 143b-5, 323a, 4 238a, 5 123b, 125a
- chromated zinc chloride 4 239a, 5 48b
- coal-tar constituents 2 312a, 3 61b, 5 47b

SUBJECT INDEX

Preservatives—*cont.*

copper chromate 2 312b, 3 231b, 322b
 copper naphthenate 2 61b, 3 323a
 copper sulphate 1 98b, 2 59b, 62b, 153a, 231b, 3 143a, 323b, 5 123b, 189a
 corrosive effects 1 286b, 4 177b
 croosote 1 47b-8a, 180b, 288a, 2 59b, 62-4a, 143b, 152b, 154b, 229a-32, 312b-3, 3 61b-2a, 143a, 318a, 324a, 325, 4 42, 116b-7a, 176-9, 5 46, 124, 189a, 273b
 diesel oil 5 189a
 diesel-compounds 2 229b
 Dowicide 3 144b
 fluorides 2 60a, 64a, 151b, 229b, 4 239a
 Lignasan 3 144b
 limonite 5 46a
 mercury salts 1 99a, 181b, 3 144b, 323a, 5 123b
 mixtures 2 59b, 63a, 312b, 4 239a, 5 125a, 46b-7
 paraffin 3 143a
 Permasan 5 266b
 Permatol 2 61a, 3 143b
 phenolic resin 5 48a
 Rustikol 1 278a, 5 259b
 Santobrite 3 231b
 sodium chloride 1 98b
 sodium dichromate 1 286b
 sodium silico-fluoride 2 229b
 specifications 2 152a, 4 178a-9
 Sulfocide 2 229b
 Tanalith 2 62b
 toxicity 1 98a, 286b-7, 5 58b, 124b, 176b
 water-repellent 5 189a
 Wolman salts 2 59b, 61b
 zinc compounds 1 286b, 2 59b, 62a, 64a, 153a, 230b-1, 311b, 312b, 3 62a, 147a, 4 238b, 5 48b, 189a, 259b
 Prices 1 299b, 2 111a, 3 18b, 179a, 192a, 268b, 5 287b, 290b
 Printers' blocks 4 169b, 235a, 5 185b
 Private forestry 1 109b, 304b-5a, 2 81b-2a, 111b, 164b, 183a, 3 178a, 265b, 267a, 4 66b, 137b, 140b, 199b, 211b, 352b, 5 208a, 231
 afforestation 5 291b
 economics 1 107
 engineering 3 88a
 legislation 2 81b, 5 288a
 management 1 194a, 199b, 207a, 3 177a, 265a, 267a
 relation to State forestry 1 304b, 2 81b-2a, 165a, 3 91a, 177b-8a, 182b, 357, 4 65b, 139b
see also Farm forestry
 Producer-gas 1 48b, 100b, 183b, 289-90a, 2 64a, 153b-4a, 232-4, 314b, 316-7, 3 63b-4, 148b, 150a, 159a, 328a, 4 44, 46-8a, 118b-9, 181b-2a, 241b-2a, 5 50, 127b-8a, 135a, 186a, 191a, 268
 engines 2 317a, 5 268b

Producer-gas—*cont.*

from sawdust 4 244b
 from wood waste 3 150b
 wood 1 111a, 2 316-7, 3 150b, 327a, 4 119, 5 262a
 Propagation, vegetative 1 38, 90a, 135-6, 235a, 237b, 2 40b, 191a, 296b-8, 3 25-6a, 108, 200-1, 289, 4 89, 154-5, 217a, 5 13b-4a
 budding 1 135b
 cuttings 1 38b, 51b, 135a-6, 252b, 260-2, 232a, 135, 191a, 212b-3, 296b-8, 3 108, 113b, 200-1, 289b, 4 15b-6a, 89, 156a, 217a, 5 14, 91b-2a, 165a, 175b, 180b
 grafting 1 135b-6a, 2 293b, 4 15b, 89b, 217a, 5 93, 165b, 236b-7a
 layering 2 32a, 3 108b
 root-cuttings 2 296b, 4 89b
 Protection, forest 1 51-2, 80a, 102-5, 114, 163b, 186-91, 211, 291b-8, 315-6, 2 68-76, 91, 156-61, 173, 242-9, 258a, 265-6, 322-30, 339, 3 70-84, 156-71, 240-58, 334-48, 4 53-60, 124-33, 185-94, 245-56, 5 58-66, 136-42, 196-204, 273-86
 Provenance 1 34a, 37b, 138a, 236, 2 15b, 116b, 3 26b-7a, 28a, 109b-10a, 187-8, 290a, 335a, 4 16a, 17a, 91a, 135b, 5 16b, 93-4, 165b, 174a, 252
 effect on increment 4 135b, 5 67a
 trials 1 22a, 161a, 234a, 2 116b, 3 110a, 202b, 290a, 4 90-1a, 5 246a
see also Seed certification, Species Index
 Pruning 1 40b, 91a, 153a, 165a, 266-7a, 269b-70, 2 97-107, 139, 299b, 3 47a, 48, 218, 258a, 4 105b, 168b, 246a, 5 94b, 103b, 251b, 256
 economics 1 165a, 4 105b, 229a, 5 33b
 effect on
 epicormic growth 2 299b
 fire hazard 5 179b
 form 1 270b, 4 29b
 growth 2 217a, 3 47a, 4 29b, 229b, 5 33, 180, 256a
 timber quality 1 167b, 2 139b, 3 47b-8, 5 251b
 natural 1 158a, 252b, 2 294a, 5 175b
 ornamentals 5 256b
 tools 1 167a, 270a, 2 139b, 216b, 299b, 3 131b, 217b, 4 29b
 top 2 43b
 wounds 2 139b, 3 84a, 306b, 5 274a
 Pteridophytes 5 21a
 Pulp
 chemical 3 230b
 effect of
 age of tree 2 149b-50a
 provenance 3 26b
 wood quality 2 58a, 3 230a, 5 45b
 wood structure 3 319a
 fungi in 1 276b, 4 237b

Pulp—*cont.*

impurities 2 58a, 3 141a, 142a, 4 40b, 5 41a
 kraft 1 285a, 4 175a, 5 188b, 264b
 mechanical 4 39b, 40b, 237b, 5 214b
 properties 1 284b, 2 57a, 4 40b, 142b, 176a, 5 45b, 265a
 semi-chemical 3 320a
 soda 2 309a, 4 40a, 114b
 sulphate 2 58a, 3 319a, 4 39b, 41a, 109a, 5 44b, 264b
 sulphite 1 98a, 176a, 2 58a, 149b, 3 230a, 4 39b-40, 175b, 237b, 5 45b, 73b, 121b, 122b
 tests 3 60a, 4 40b
 yield 2 308a, 4 175b, 5 45b
 Pulp and paper industry 1 46a, 98, 276, 284-5, 314, 2 8a, 57, 149a, 226b, 308a, 242a, 332a, 3 18a, 59b, 142b, 229b, 279b-80a, 319a, 4 39b, 175-6a, 200b-1a, 5 43b-6a, 56-8a, 122a, 189a, 264b, 265b
 bamboo, use of 1 46a, 4 175b, 5 45a, 123b, 188b
 bibliographies, reviews 2 108a, 207a, 3 189a, 5 122a
 by-products 5 73b
 suitable species for 1 98a, 175a, 273b, 283b-4, 2 57b-8a, 149b-50a, 226b, 236a, 308b-9, 3 60, 230a, 313b, 318b, 4 39a, 40a, 175a, 237b, 5 34b, 45, 123a
see also Geographical Index
 Pulping
 acid 3 320b
 alkaline 3 59b, 319b
 chemical 2 67a, 3 230, 5 188b
 cooking 1 179a, 2 149b, 309b, 3 142b, 230a, 4 40b, 5 188b, 265b
 grinding 2 57a, 5 44b, 118b, 123a
 hardwoods 3 320a
 mechanical 5 122a
 nitric acid 2 309a, 3 60a
 phenol 5 265a
 pretreatment 2 240a, 3 142a, 4 39b, 115a, 237a, 5 122b
 semi-chemical 2 226a, 3 60b, 320a
 sodium-base liquor 3 320a
 sodium hydrosulphide 5 265b
 sulphate 1 284b, 2 58a, 150a, 3 60a, 4 175b, 5 265
 sulphite 1 284a, 285, 2 149-50a, 3 60b, 142, 230a, 320, 4 39a, 114b, 175b, 5 121b-2
 Pulpwood
 analysis 1 276b
 conversion factors 5 287a
 decay 2 145b
 fungicides 4 114b, 5 188b
 plantations 2 130a, 5 26b, 69b, 253a
 scaling 1 281a, 289b, 3 173a
 small-diameter 3 230b
 testing 4 40b, 5 121b, 262a
 transporting 4 173b
 QUININE 1 101b, 184b, 2 31a, 155a

SUBJECT INDEX

- RABBIT**
 damage **2** 34a, 247a, **4** 128b, 250b
 extermination **3** 81a, **4** 59a, **5** 140b
- Races** *see* Provenance
- Rainfall** *see* Precipitation
- Rayon** **2** 57b, 150a, 309b, **3** 142b
- Reaction wood**
 compression wood **1** 144a, **2** 46a, 305b, **3** 55b, 139a, 313b, 327a, **4** 110a, 230a
 tension wood **1** 144a, **3** 313b, **4** 235a, **5** 260b
- Reclamation**
 eroded lands **1** 133a, **2** 188b, **4** 153a, 166a, **5** 89b
 mining spoil **1** 164b, **3** 215b, **4** 27b, 218b
- Recreational use of forest** **1** 199a, **2** 164a, 254a, **3** 89a, 103a, **4** 199a, 261a, **5** 147a, 149b, 211b, 251a, 291b
- Regeneration** **1** 32b, 92b, 159a, 254a, 255b, 305b, **2** 34b, 129a, 206b-7, 214b, **3** 21b, 121a, 177b, 212a, 299b, **4** 154b, 226a, **5** 68a
 artificial **1** 125a, **3** 107b, 212a, **4** 100b, 154b, **5** 28b
 costs **3** 301a
 direct sowing **1** 257a, 299b, **2** 38, 132b, 209b, 211a, **3** 124a, 129a, 211, **4** 25a, 26b, 101a, 164b, **5** 110b-111, 249b, 253a
 effect of shade **1** 266a
 release **1** 269a, **2** 209b
 sowing methods **1** 257b-8a, **2** 208a, 210a, 211a, **3** 44b, **4** 102
 herbaceous competition **1** 90b, **4** 163a, 225a
 natural **1** 32-3, 86b, 129b, 159-60, 248b, 254b, 266a, **2** 34a, 130b, 138a, 207, 294b-5a, **3** 42b, 121-3a, 129b, 177a, 297a, 300-1a, 304a, 350b, **4** 24b, 98b-9, 100b, 157b, 162b-3, 221b, 225b-6a, **5** 27b-8, 100b, 105b, 109b, 145a, 176b, 179b, 235a, 249a
 assessment **2** 252a, **3** 42b
 care of **1** 32b, **3** 122b-3a, 129b, **4** 104b
 release **1** 32a, 90a, 91a, 269a, **2** 139a, 216a, 294b, **3** 129a, **4** 29a, 225b, **5** 28b, 112b
 root-suckers, by **1** 38a
 natural *v.* artificial **3** 300a
 site preparation **1** 18b, 32b, 254b, 266b, **2** 34b, 38b, 209b, **3** 43, 129a, 213a, 300b, **4** 25a, 100b, 163, **5** 110b-11, 251b
 sowing *v.* planting **1** 255a
- Repellents** for
 bark beetles **5** 66b
 wood borers **3** 322a
- Reports** *see* Geographical Index
- Research institutes, programmes etc.**
1 72b-3a, 75b, 122b, **2** 7a, 109a, 181a, 276b, **3** 190b, 279a, **4** 81b, 147b, 168a, 211b-2a, **5** 25a, 33, 84b-5a, 95a, 230b, 235b
see also Geographical Index
- Resin** **1** 50b, 145a, 184b, **2** 31b, 66a, 237a, 319a, **3** 66b-8a, 154, 221b, 238b, 327b, 331b, **4** 41a, 50a, 115a, 123b, 183b, 213b, 244a, **5** 52a, 74a, 119a, 131
 copal **1** 184b, **2** 66a, **4** 50a
 properties **4** 50a, **5** 270b
 removal from wood **4** 115b, **5** 131b
 refining **5** 52a
 selecting trees for high yield of **5** 194b
 water content **4** 50a
- Resin-tapping** **1** 50b, 101b-2a, **2** 237a, 319b, **3** 67b, 154, 238b, **4** 122a, 256a, **5** 131a, 270
 chemical treatment **1** 50b, **2** 319b, **3** 154a, **4** 122a
 collection methods **5** 270b
 intensity **4** 122a
- Resin pockets** **1** 44a, **4** 172a
- Respiration** **1** 237, **2** 189-90a, **5** 13b, 91b, 164a
- Rings, growth** **1** 171b, **2** 46a, 300b-1a, **3** 33b, 51, 173b-4, 350a, **4** 63a, 258a, **5** 144b, 206b, 257a
 analysis **3** 85b-6a, 173b, **4** 63a, 134b, 196a
 false **1** 193a, **4** 258a
 influence of environmental factors
1 272a, **3** 86a, 174a, 260b, 350a, **4** 258a
 measurement **2** 45a, **3** 309b
see also Dendrochronology
- Roads**
 building **1** 298b, **2** 68b, 321b, **3** 156b, 240b, 334b, **4** 53b, 112a, 185b, **5** 273b
 culverts **4** 53b
 layout **3** 334b
 plywood blocks for **2** 307b
 rock drilling **2** 241b
see also Bridge construction
- Roadside trees** *see* Ornamentals
- Rodents** **1** 257b, **2** 128a, 132b, 205a, 247b, **3** 81a, 129a, **4** 58b-9a, 128b, 192a, **5** 28a, 110b
 control **4** 102a, 128b, **5** 110b
 rôle in insect control **4** 60b
- Roofing felt** **5** 264b
- Root(s)**
 adventitious **2** 134b, **3** 218b, **4** 53a, **5** 17a
 aerial **4** 17b, **5** 17a
 anatomy **3** 133b, 309a, **4** 92b
 diseases **1** 188b, 241a, 294a, 295b, **2** 19a, 20a, 72b, 119a, 192a, 193a, 285b, **3** 70a, 75b, 161b, 162b, 246a, 340a, **4** 57b, 126b-7, 128b, 190b, 191b, 247a, 248b, 255a, **5** 197a, 277b, 280b, 285a
 distribution in the soil **2** 130a, 204a, 293b, **3** 111b-2, **4** 25a, 92b, 218a, **5** 97a, 109a, 247b
 effect on soil properties **4** 84b
 fungi **4** 85a, **5** 25b, 97a
see also Mycorrhiza
 grafts **3** 29b, **4** 92a
 nodules **1** 131a, **3** 194a, 196a, 285a
 parasites **2** 127a, **4** 93a
 periodicity of growth **1** 157a, 252a, **3** 111b
- Root(s)—cont.**
 stilt **5** 238a
 stumps, of **3** 130b
 suckers **1** 81b, **3** 214b
see also Regeneration, natural
 systems **1** 21b, 22b-3a, 81b-2a, **2** 113b, 129b, 293, **3** 29b, 111b-3a, 298a, 335b, **4** 92, 162a, 217-8a, **5** 97a
- Rosin** **1** 50a, **2** 314a, **3** 332a, **4** 82b, 88b, 183b, **5** 131b, 270
- Rot fungi** *see* Decay
- Rotation** **1** 196a, 301b, **2** 163a, 332b-3a, **3** 88a, 353b-4a, **4** 138b, **5** 68a, 145b
 financial **1** 196a
- Royalties** **1** 58b
- Rubber**
 artificial from wood **5** 50b
 production **4** 51b, 183b
- Rubber trees**
 diseases **2** 120a
 distribution, natural **5** 168a
 growing **2** 238a, **4** 183, **5** 26a, 53, 195a
 insect pests **4** 193b
 nomenclature **3** 206a
 poisoning **2** 299a
 wild **2** 320a, **4** 122a, 182b, **5** 53b-4a, 132b-3, 195a, 272a
- Rust diseases** **1** 139b, 141a, 188b, 239b-41b, **2** 120b, 191a, 246, 284b, **3** 35a, 76a, 77b, 160b, 247a, 339b, **4** 56a, 95b, 126, 249a, **5** 90b, 137b, 138b, 139b, 198b, 199b, 276a, 277-8a, 281b
see also Blister rust
- SACCHARIFICATION** *see* Hydrolysis, wood
- Salt spray** **2** 25b, 118, 191a, **3** 71a, **4** 245b
see also Soils, types
- Sample plot technique** **1** 53a, 106b, 195a, **2** 162b, 249a, **3** 262a, **4** 196b, **5** 67b, 143b
see also Enumeration surveys
- Sampling**
 errors **3** 34b, **5** 205b
 methods **2** 162b, **4** 256a, **5** 67a, 205-6a
- Sand-dune fixation** **1** 229a, 258a, 265a, **2** 12b, 35b, 69b, **3** 106a, 215b, 288b, **4** 88a, 100a, 215b, **5** 89b, 254a
- Sapwood** **2** 52, 54a, 63b, 218b, **4** 34b, 230a, **5** 113b
see also Decay, Heartwood
- Sawdust**
 burning **4** 52b, 184b, 244a
 chemical treatment **5** 46a
 drying **2** 320b
 hydrolysis **4** 119b
 mulch and soil improver **3** 127b, **5** 253b
 reducing combustibility **4** 43b
 spontaneous ignition **4** 52a

SUBJECT INDEX

Sawdust—cont.

utilization **3** 155b, 239b, **4** 52a, 74-7, 119, 244, **5** 55b, 118b, 127a, 134b-5a, 272b
 bibliography **4** 76-7

see also Waste-wood utilization

Sawmilling **2** 307b, **3** 59a, 224b, 229a, 267b, 318a, **4** 39a, 114a, 175a, **5** 43b, 76, 121b, 188a, 261a
 mill studies **2** 56b, 307b, **3** 59, **4** 134a, **5** 117b, 290b

reducing waste **3** 58a, **4** 236a

Sawmills **1** 8b, **3** 59a, 280a, **4** 39a, 175a, 201a, **5** 293a

Saws, logging

circular **3** 315a

hand **1** 96a, **3** 314b

maintenance **2** 54b, **3** 56b

pitsaws **4** 38a

power **1** 96b, 178a, **2** 306b, **3** 140a, 337b, **4** 173a, 235, **5** 40a, 261b

sharpening **1** 96, **3** 314b, **4** 173a, 235a

Saws, milling

band **1** 282b, **3** 318a, **4** 39a, 114a, 175a, 237a

circular **1** 282b, **2** 307b, **4** 113b, 175a, 237a

frame **4** 237a, **5** 43b

sharpening **4** 39a

Seasoning **1** 46b-7, 99b-100, 182-3a, 285b-6a, **2** 58b-9, 85a, 142a, 151a, 227-8, 309b-10, **3** 63, 147b-8, 233-4, **4** 107b, 117b-8, 180, 240a-1, **5** 48b-9a, 124b, 125b-6a, 180a, 190, 261a, 267b

air-drying **1** 46b, 99b, 182a, 285b-6a, **2** 58b, 151a, **3** 63, 233b, **4** 44a, 117b-8a, 180, 241, **5** 49a

bibliography **1** 182b, **3** 189a

canes **2** 66b

chemical **1** 97b, **2** 227b-8a, 310b, **3** 63a, 234, 327a, **4** 117b-8a, 180, 241a, **5** 125b

dielectric **2** 227a, 310b, **3** 326b, 327b

effect on

decay **5** 116b

mechanical properties **3** 148a, **5** 180b

in the forest **4** 110b-1a

kiln construction **3** 327a

kiln(s) **1** 47, 100a, 182, 285b, **2** 59a, 151a, 227a, 309b-10a, **3** 63a, 147b-8, 233, 325a, 326b-7, **4** 43b, 117b, 180, 240a, **5** 49a, 125b-6a, 190a, 267b

moisture content grading **2** 59b, 151a

salt **5** 126a

small poles **4** 180b

steaming **1** 100b, 183a, **2** 310a, **3** 148a, **5** 126a

swing-rack **2** 59a, **3** 147b

vacuum kilns **4** 240b

vencer **4** 117b

Seed

after-ripening **3** 125, 213a, **4** 216a, **5** 91b, 110a

certification **1** 87a, 255b, **5** 252b

Seed—cont.

collection **1** 256a, **2** 295b, **3** 43b, 124b, **4** 164a, **5** 29b, 177a
 comprehensive studies **3** 301b, **4** 163b

development **2** 37b, **3** 107a, **4** 155b, **5** 22a

diseases **4** 55b

dispersal **1** 87a, 246a, **3** 32a, 43a, **5** 110b

dormancy **2** 131b, **4** 25b-6a

extraction **1** 34b, **2** 38a, 132a, **3** 43b, 125a, **4** 164b, **5** 252a

fall **2** 190b, 288b

'Georgia seed law' **3** 302a

germination **1** 34a, 88, 89b, 135b, 161-2a, 237b, 245b, 255b, 256b, 236-7a, 210b, 288a, 296a, **3** 24b, 29a, 44a, 126a, 127b, 199b, 289b, 302, **4** 25b-6, 89a, 90a, 101a-2a, 216a, 226a, **5** 13b, 22a, 28a, 29, 91b, 110a, 177b, 252a, 253a

impurities **5** 29a

longevity **2** 295b, **3** 302b, **4** 26a, 102a, **5** 29a

morphology **5** 237b

origin **1** 139a, **2** 271-5, **3** 187-8, **4** 164a, 217b

pre-treatment **1** 35a, 161a, 255b-6, 236b-7a, 131b, **4** 25b-6, 101-2a, 163b-4, 226, **5** 91b, 110a

production **1** 18b, 236a, 245b, 255b-6a, **2** 118a, **3** 43a, 124b, 302a, **4** 101b, 226a, **5** 14a, 28b, 110a, 173a, 177, 252a

protein content **3** 198b

quality **1** 34a, 256a, **3** 124b, 213b, 302b

sterilization **1** 161b

storage **1** 87a, 161a, **2** 37, 132b, 210b, **3** 44a, 213b, **4** 25b, 101b, 164b, **5** 110a, 177a

testing **1** 35-6a, 87b, 89b, 161b, **2** 37a, 131b, 210a, **3** 44a, 125b-6a, 302b-3a, **4** 25b, 102a, 164, 226a, **5** 110a, 252b

viability **1** 87b, 119, 246a, **2** 210a, 295b, **3** 44a, 107b, 213b, **4** 102a, **5** 252b

vivipary **3** 32a, **5** 97a

weight **1** 36a, 77b, **2** 210a

years **1** 135b, **2** 197a, **3** 298b, **4** 162b

see also Provenance

Seed-source stands **5** 252a

Seed trees **2** 295a, **3** 213b, **4** 156b, **5** 175b, 252a

Seeding felling **3** 42b, 122b

Seedling

anatomy **2** 124a, **5** 22a

cotyledons **2** 196b

development **1** 75a, 135b, **2** 204, **3** 289b, 350b, **5** 25a, 91b, 165a, 175b, 253b

diameter **3** 215a

identification **1** 135b

root development **2** 129b

photosynthesis **5** 90b

storage **1** 38a, **2** 211a

Seedling—cont.

see also Nursery practice, Planting stock

Selective felling **1** 92a, 165a, 177a, 280b, **2** 33b, 138b, 205b-6a, 306a, 324b, 333b, **3** 41a, 120b, 210b, 314b, **4** 99b, 137b, **5** 176a, 248

Shade trees **1** 139b, 177a, **2** 42, 214a, **3** 66a, 215a, **4** 167a, 184a, 187a, **5** 136a, 203a, 254a, 292b

diseases **1** 139b, **2** 245b, **3** 249b, 338b, **4** 55a, 128a, 185a

insect pests **2** 161, 247b, 248b, **3** 81b, 171a, 258b, 348b, **4** 60b, 133b, 192a, **5** 282b, 283b

Shade tolerance **2** 31b, 292a, **5** 108a

Shelterbelts **1** 75b, 92b, 167a, 269a, **2** 43b, 75b-6a, 119a, 139a, 216b, 280a, 299b, **3** 47a, 131a, 217, 242a, 288a, 306a, 351a, **4** 29, 105b, 168b, 229b, **5** 33, 254a, 255b-6a

Shifting cultivation **1** 125a, 305b, **2** 83a, 158a, 282b, **3** 74b, **5** 148b

Shingles **1** 181a, **2** 225a, **4** 213a, **5** 41b, 119a

Shoes, wooden **1** 49b, **5** 49a, 185b

Shoot(s)

adventitious **2** 134b

apex **5** 97b

borers **1** 297, **2** 248a, **3** 70a, 169b, 251b, **4** 25a, 132a, **5** 285

growth **1** 252a, **3** 208b, **5** 92b, 97b-8a

Silk worms **4** 184b

Silvicultural systems **1** 158b, 253a, 269a, **2** 31a, 138b, **3** 41b, 210, 299a, 300a, **4** 24b, 137b, 221b, 225a, **5** 27, 31b, 68a, 109, 176a, 288a

clear felling **3** 121a, 210b, 300a

coppice-with-standards **1** 158b, 193b, **2** 34a, 168b

high-forest-with-standards **1** 30a, 158b

improvement fellings **2** 299b, **3** 130b, **4** 22a, 167b-8, 228a, **5** 248a

irregular **3** 210a

selection **1** 30b, 86a, 269a, **3** 41b, 119a, 120b, 122a, 210, **4** 99b, 162b, **5** 109a

shelterwood **3** 210a

tropical **1** 28a, **2** 203a

uniform **2** 207b

see also Selective felling

Silviculture **1** 28-40, 86-92, 111b, 112-3, 155-68, 205b-6, 208-10, 251-70, 312-4, **2** 30-43, 84a, 88-9, 128-39, 169, 203-17, 262-4, 292-9, 338, **3** 38-48, 117-31, 207-18, 296-306, **4** 22-9, 98-105, 161-8, 224-9, **5** 25-33, 108-12, 174-80, 246-56

Site factor(s)

classification **1** 74a, **2** 187b, 333a, **3** 88b, 178b, 261a, 262b, **4** 104a, 138b, 197a, **5** 290a

effect on

choice of species **1** 26b, **4** 166a

disease **2** 18b

SUBJECT INDEX

Site factor(s)—*cont.*
 form 2 77b
 growth 1 26b, 132b, 2 25b, 3 297b, 4 226b
 survival 3 41a, 5 247b
 indexes 1 300b
 Site quality 2 79a, 252a, 4 259b
 assessment based on
 environmental factors 3 88b
 height 5 67b
 height and diameter 1 196b, 4 197b
 soil characters 2 79a, 5 25a, 209a
 vegetation 2 333a, 5 162a
 wood production 2 187b
 Skidding 2 54b, 147a, 320b, 3 57b, 140b, 226b, 316a, 4 37b, 147b, 235b
 chute 1 185b, 2 68a, 3 227a
 tractor 2 54b, 3 226b, 316a
see also Logging
 Slash
 disposal 1 168b, 266a, 2 23b, 299a, 324b, 4 111a, 137b, 5 118a
 effect on
 coppice growth 2 206b
 regeneration 2 207b, 5 145a
 fire danger 1 186b, 4 136b
 fuel for 5 186a
 Sleepers 1 44b, 48a, 100b, 180b, 290b, 2 62a, 228a, 231, 235b, 303b, 313a, 3 62a, 65a, 146a, 229a, 323b-4, 4 43a, 109b, 118a, 120a, 176b-7a, 178, 182a, 241a, 5 124a, 259a, 260a, 266a
 Slide rule 4 61a
 Snow damage 1 240b, 312a, 2 284a, 323a, 3 76b, 241b, 335a, 4 22a, 54a, 124a, 5 274
 Snow
 control 1 254b, 266a, 3 131b
 cover and vegetation 1 20b, 3 198b, 4 215a, 5 32b
 drifts 3 306a
 Social aspects of forestry 1 303b, 2 253b, 3 91, 180b, 355a, 4 65a, 138a, 140a, 198a, 261, 262b, 5 71, 147b, 212a, 288a, 290b-1
 Soil
 aeration 3 124a, 215a, 4 197a
 analysis 1 129a, 131a, 2 185, 3 282a, 4 85a, 150a, 5 175a
 base exchange 2 137a, 4 150a
 catena 2 14a
 chemical properties 1 16-7, 229b, 231, 2 10b, 113b, 185-6a, 282, 3 119b-20a, 282, 4 84b-5a, 87b, 150, 161b, 5 12b, 87b, 88b, 159b, 175a
 classification 1 128a, 129a, 2 14a, 115a, 3 356b, 4 87b, 5 159b
 colloids 4 261a
 conservation 1 79b, 81a, 133, 305b, 2 68b-9a, 167a, 180a, 188, 3 106a, 261b, 356b, 4 152b, 263a, 5 13, 89b, 163a, 233b
 bibliography 2 180a
 depth 1 131b
 fauna 1 17a, 145b, 230a, 2 12a, 202b, 3 20b-1a, 283b, 4 214b, 5 88a, 160a

Soil—*cont.*
 formation 1 126a, 2 12b, 3 19b, 196b, 285b, 4 152a
 microfauna 2 12a, 5 232a
 microflora 1 84b, 129b, 2 114a, 186a, 4 214b, 5 20b
 moisture 1 126, 128b, 156-7a, 229a, 231a, 243b, 2 10, 12b, 13b, 18b, 115a, 204b, 280b, 3 19b-20a, 43a, 105a, 113a, 119b, 288b, 298a, 4 84, 86b, 104a, 152, 197a, 5 25a, 159b, 246a
 nutrients 1 15a, 19a, 77-8a, 231, 2 12a, 14a, 115a, 281, 3 103b, 195-6, 283b-5a, 4 14b, 87, 150b, 5 12, 26a, 159b, 232a, 233a, 246b-7
 organic matter content 2 293a, 4 85b, 5 88b, 232a
see also Humus, Litter, Peat and peatlands
 pH 1 16, 89, 129b, 230a, 2 12a, 136b, 187a, 280b, 3 119b, 120a, 213a, 4 23b, 85b, 150b, 5 85b, 175a, 178b
 physical properties 1 16, 75b, 82a, 128b-9a, 132b, 219-22, 229, 231a, 2 10, 70a, 113a, 280, 3 19b, 102b, 282a, 4 84, 150a, 152b, 5 13a, 159b
 profiles 2 12b, 281, 293b, 4 150, 152a, 5 25a
 solifluction 3 194b
 temperature 1 262b, 2 70a, 204b, 4 14a, 5 90a-1b
 textbooks 1 207b, 3 102b, 4 84a
 trace elements 1 22b, 2 113b
 types 3 22a, 43a, 111b, 4 87b, 5 25a, 102b
 brown forest 3 197a
 chernozems 2 13b, 3 112a, 5 89a
 desert 3 112a
 gley 2 14a
 laterite 4 152a, 5 89b
 podzols 2 113b, 115a, 280b-1, 3 21b-2a, 104b-5a, 197a, 286b-7a, 4 151a, 152a, 5 87b, 162b
 prairie 4 87b
 saline 2 129a, 3 119b, 128b, 5 89a
 solonchak 2 129b, 5 89a
 solonchak 5 89a
 'szik' 3 105a, 28b
see also Peat and peatlands
see also Erosion, Fertilizing, Nursery soils, Mycorrhiza, Reclamation
 Sour-felling 2 223b, 306a
 Sowing, direct *see* Regeneration, artificial
 Sowing *see* Nursery practice
 Spacing *see* Plantations
 Species differentiation 4 221b
 Spiders 1 297b
 Spike disease of Sandal 1 140a, 142b, 2 287b, 3 342b
 Sports equipment 1 49b, 3 327a
 archery 2 236a
 oars 3 152b

Springs, wooden 4 242b
 Squirrels
 damage 4 128b
 value in insect control 2 128a
 Stacking logs 2 228a, 3 153a
see also Fuelwood, Seasoning
 Stain
 blue 1 175b-6a, 277-8a, 286a, 2 98b, 145a, 3 54a, 61a, 137b, 148a, 223a, 232a, 247a, 248a, 4 116a, 173a, 189b, 5 39a, 48a, 198a
 prevention 1 95b, 176a, 181b, 278a, 2 52b, 3 231b, 4 43b, 5 39a, 48a, 123b
 canker 4 127b
 fungal 1 285b, 2 145, 227a, 228b, 3 63a, 137a, 144, 312b, 4 171b, 221a
 glue 1 178a
 Stains for wood 2 150b, 309b, 3 61a, 143a, 5 123b
 Stand
 composition 1 86b, 231a, 3 175, 4 136b, 5 287a
 density 1 54a, 166a, 2 76b, 163a, 252a, 331b, 3 175b, 4 257b, 5 69b, 146b, 209b, 289b
 improvement methods 1 91a, 92a, 166b, 2 43a, 215a, 216b, 5 32a, 175b
 normality 1 56a, 301b, 2 79b, 163a, 3 87b, 4 260b, 5 69b
 structure 1 86b, 196b, 300b-1a, 2 79b, 3 120a, 179a, 350b, 4 135a, 5 144b, 289b
 tables 1 54b, 300a, 2 331a, 5 145a
see also Silvicultural systems
 State aid and control
 forestry 1 109a, 304, 2 81b, 165a, 334, 3 91a, 177b, 265a, 266b, 357, 4 1-9, 137a, 139b-40, 5 71b, 207b, 212a, 213a, 291b
 timber trade 4 201b
 Statistical methods 1 12a, 137a, 203b, 223a, 2 7a, 180a, 336b, 4 211a, 5 7a, 17a, 155a, 229b
see also Ecology, methods, Mathematical methods, Sampling
 Statistics, forest 1 14, 73b, 123-4a, 224-5, 2 7-8, 110-1, 182-4, 276b-9b, 3 16-8, 98-100a, 192-4, 279-80, 4 11b-13, 82-3a, 147b-9, 212b-3, 5 9-10, 86b-7, 156-8a, 231-2
see also Geographical Index
 Storage of
 logs 4 173b, 5 40b
 plants *see* Planting stock
 timber 2 154b, 5 129a, 185b, 259b
 Strength of
 bolted joints 1 275b
 dowels 5 58b
 early and late wood 4 108a
 knots 1 95b, 2 47b
 laminates 5 115b, 120b, 187b
 mine timbers 1 101a
 nails 5 58b
 notched timber 5 256a
 plywood 1 285a, 2 50b, 4 175b, 5 37a, 120b-1a, 187b-8a

SUBJECT INDEX

Strength of—*cont.*

veneers 5 260b-1a
Strength, wood 1 42, 95a, 174, 275, 2 50, 221a, 302a, 3 52, 202b, 311a, 4 33a-4, 108, 170b-1a, 232, 5 36b-7a, 115, 182-3a, 258
 bearing 5 37a
 bending 2 51a
 cleavage 4 34a, 232b
 compression 1 42a, 44, 273b, 275a, 2 221a, 3 51b, 221a, 317a, 5 257a
crushing 1 275b, 2 225b
 effect of
 chemicals 2 225b
 compression and steaming 4 34a
 decay 1 176a, 2 222b, 3 54a, 137a, 5 39a
 fungal stain 1 41a, 175b-6a, 277b, 3 54a, 222b
 knots 5 36b
 late wood 1 273a, 5 258a
 moisture content 1 41b, 172a, 2 50b, 3 52a, 55b, 4 34a, 232b
 preservatives 5 182b
 seedling or coppice origin 3 52b
 specific gravity 1 172a, 2 50b, 4 55b, 171a
 steaming 5 182b
 temperature 2 50b, 3 52a, 135b, 5 182b, 258a
 elasticity 1 95a, 4 33b-4a, 108b, 5 36, 258a
 fracture 4 171a
 grading 1 174b, 3 152b
 hardness 1 174a, 273, 3 220b, 224b, 310b
 specifications 4 182b
 stress analysis 4 106b
 stress-strain relations 5 115a, 258b
testing 1 95a, 174b, 275, 2 48a, 50a, 302a, 3 52, 220b, 4 33b-4, 108, 170b-1a, 230a, 232, 242a, 5 36a, 182b, 263b
 bending 1 42a, 2 50b, 3 52, 135b, 311a, 318a, 4 33b, 108b, 230a, 5 39a, 182b, 188a
 bending thin strips 1 275b, 4 38b
 hardness 2 50a, 3 220b, 224b, 310b, 4 171a
 impact-bending 1 174a
 impact-torsion 1 42b, 3 220b, 5 182a
 shear 5 58b, 188a
 torsion 2 50b
 toughness 1 275a
 wood substitutes 2 64b
Stress-grading 2 302a, 3 152b, 330a
Stump removal 3 140, 226a, 315b, 4 111b, 235b, 5 118a, 185a
Stumpwood
 conversion 3 315b
 utilization for resin 2 240a, 3 68a, 4 50b
Succession 1 24, 25b-6a, 83a, 84a, 246a, 247, 2 12b, 25b, 125b, 197, 210a, 289a, 3 30b, 33, 34b, 115a, 204b-5a, 304a, 4 19b-20a, 95, 104a, 186b, 220a, 5 20a, 100b-1, 103a, 108a, 241-2

Succession—*cont.*

associated with regeneration 4 104a, 157b, 162b, 5 27b
 effect of fire 3 33b, 5 239b
 flood plain 4 53a
 pioneer plants in 3 293, 4 20a
 Sugar, Maple 2 119b, 238b, 3 68b, 154b, 4 183a
 Sunscorch 4 273b, 286b, 5 124a
 Sunspots 3 323b, 4 258a, 5 59a
Surveying 1 55b, 195a, 2 78, 332, 3 262a, 5 146a
 instruments 1 195b, 2 78b, 332
 see also Aerial photography
 Surveys, forest 1 54a, 227b, 233b, 305a, 2 78a, 163b, 3 178b, 191a, 193a, 353b, 4 64b, 138a, 196a, 197a, 259, 5 157-8a, 162a
 see also Enumeration surveys, Geographical Index, Statistics, forest
 Surveys, regional *see* Geographical Index
 Sustained yield *see* Yield regulation
 Swamp drainage 1 305b, 4 215b
 effect of tree planting 5 178a
 Sway, effect on diameter growth 2 33a

TALL oil *see* Waste liquor
 Tanks, wooden 2 65a, 154b, 304b, 4 120b, 5 58b, 186a
 Tannins 2 66a, 143a, 148b, 236b, 3 66a, 331a, 4 49b, 56a, 120b, 243a, 5 94a, 116a, 130a, 239a, 269
Tanstuffs
 bark
 content of tannins 1 49b, 2 236b
 drying 2 318b
 extraction 2 236b, 5 129b
 fuel 5 118b
 harvesting 3 153b
 mangrove 5 269b
 Spruce 3 237a, 331a, 4 49b, 121a, 237a
 Wattle 3 237, 4 28b
 industry 3 330b
 supply 3 153b
 wild species, from 3 237b, 331a, 4 49b, 121a, 5 129b, 192b-3a, 269
Taper 2 77b, 192b, 3 349b, 4 62a, 195a, 5 143b, 204, 286
 tables 1 105b, 298a, 4 62a, 5 286a
Tar *see* Distillation and distillation products
 Taxation, forest 1 199b, 301b, 2 82a, 165a, 254, 334b, 3 91a, 120b, 177b, 181b, 356, 4 137a, 139a, 199b, 262b, 5 72a, 148
Temperature
 cold resistance 1 251a, 5 167a
 effect on
 growth 1 186a, 235a, 3 174a, 4 134b, 5 26b, 89b, 206b
 water movement in trees 1 235a
 gradients near soil surface 5 159a
 leaf damage, cause of 4 186b, 245a
 tolerance 2 292a

Temperature—*cont.*

tree 2 283b
see also Frost, Sunscorch
Tending stands and trees 1 165, 2 42b, 3 130a, 4 28-9, 104b, 167b-8, 228, 5 31b-3
 tools 2 42b
Termites 1 28a, 251a, 3 295b, 5 39b, 203b
 attacking
 buildings 4 110a, 234b, 5 117a
 trees 3 82a, 4 132b, 234b
 wood 3 55a, 5 39b
 control methods 1 181a, 2 53a, 60b, 146, 152a, 229b, 311b, 3 61b, 145b, 222a, 232a, 322a, 4 41b, 132b, 194a, 230b, 234b, 254b, 5 117, 184b, 189a, 266b
 effect on soil properties 3 103b, 283b, 4 85b, 5 161b
 fungi associated with 2 128a
 habits 4 110a, 234b
 laboratory study 4 97b
 resistance to 2 146a
Textile mills, accessories 1 49b, 4 49a
Thinning(s) 1 40a, 90a, 91b, 165-7a, 253, 266b-9a, 2 138b, 215a, 216a, 299a, 3 120a, 130, 304b-5, 4 28b, 5 31b-2a, 103b, 112a, 179b, 254b-5a
 coppice 2 43a
 cycles 1 166b
 economics 5 254b
 effect on
 crown development 4 63b
 form 5 204a
 growth 1 268b, 2 43a, 3 87a
 microclimate 2 216a
 quality of timber 3 305a
 volume production 1 92a, 2 331b, 4 104b, 167b, 5 67b, 255a
 experiments 1 92a, 266b, 3 216a, 4 104b
 methods 1 267b, 2 299a
 natural 1 92a
 schedules 1 40a, 2 76b
 wolf trees 3 305a
Ties *see* Sleepers
Timber measurement
 board feet 4 62b, 195b
 conversion tables 1 281a, 2 156a
 Doyle rule 2 249a
 formulae 2 76a
 Hoppus system 3 172a, 259a, 4 62b
 instruments 2 161a
 log rules 1 291b, 2 162a, 249a, 3 172, 4 62b, 5 143a, 204b-5a
 ready reckoners 5 144a
 sample scaling 1 298a, 3 259a, 4 62, 195b, 5 143, 204b-5a
 simplified method 4 257a
 stacked wood 3 173a, 259b, 349b, 4 63a, 5 286a
Timber trade
 international 1 13a, 102b, 200b, 2 43b, 110a, 3 91b-2, 357b-8a, 4 67a, 148a, 263b, 5 213b, 293b

SUBJECT INDEX

Timber trade—*cont.*

national **1** 168a, 177a, 200, 282a, 306, 2 7b, 30a, 44a, 83b, 110, 256b, 335b, **3** 18, 48a, 58a, 92a, 183, 268, 358b, 4 66b, 148a, 200b-1, 263b, 264b, **5** 73b, 75, 156, 213b, 216a, 293
 statistics **1** 51a, 200, 224b-5, **2** 7b, 110, 227a, 334a, **3** 18, 48a, 279-80, 4 66b-7, **5** 156-7, 214, 261a, 293
 wartime **1** 303a, **2** 261b, **3** 92b, 183a, 355a, 357b, 4 67b, 200b, 201b, 264a, **5** 40b, 75a, 150a, 214, 293b

Town forests *see* Communal forests

Tractors **1** 160a, **2** 67b, 321a, **3** 57, 140b-1a, 226b, 334a, 4 37b, 81b, 185b, **5** 155b

see also Fire fighting, equipment, Hauling, Logging, Transport, Skidding

Translocation **3** 24a

Transpiration **1** 81a, 155b, 292a, **2** 17a, 31b, **3** 106b, 297b-8a, 4 88b, 153b, 216a, **5** 91a, 164a

Transplanting *see* Nursery practice
 Transplanting big trees **2** 168b, **4** 227a

Transport **1** 185b, **2** 67b-8a, 156b, **3** 57, 140b, 226b-7, 316, 4 173b, **5** 118a, 261b
 costs **2** 68a, **3** 316b, **5** 40b
 planning **4** 111b

Tree classes **1** 158b, 280b, **3** 130b, **5** 108b, 206b, 289b

Tree surgery **2** 326b, **4** 58b, 167a, **5** 253b

Tsetse control **1** 63-8, 152a, **3** 261a, **4** 153a, **5** 213a

Tung **1** 291a, **2** 96b, 126b, 155b, 237b, 293a, **3** 68b, 239a, **4** 217a, 244a, 245a, **5** 52b, 281b

Turpentine **1** 50a, 184b, 291a, **2** 240a, 313b-4a, **3** 332b, **4** 41a, 50b, 82b, 183b, 244a, 332a, **5** 52b, 132a, 271a

UNDERPLANTING **2** 42a, **3** 123b, 216a, **4** 28a, **5** 70a
 effect on increment **2** 214b

VALUATION **1** 52a, 197a, **4** 260b, **5** 143b, 206a, 290

Vegetation types **1** 24-6, 82-4, 146-9a, 202a, 246-7a, **2** 124b-6a, 198b-200, 289, 333a, **3** 34, 43a, 178b, 203, 291b-3, **4** 18-9, 93-5, 157, 219b-20, **5** 17b-20, 99-103a, 167b-70a, 239b-41

aquatic **4** 157b
 chaparral **4** 93b, 95, **5** 17b
 classification **1** 148, **2** 289a
 desert **4** 93a

grassland **1** 24a, 148b, **2** 199b, **3** 114b, **5** 170a, 239b-40a
 mapping **1** 147a, 148b, **2** 78b, 199, **3** 34a, 178b, **5** 99a

Vegetation types—*cont.*

relation to
 climate **1** 24b, 26a, 146a, **2** 125a, **3** 176a, 291a, **4** 136b, 156b, **5** 25b, 99b, 100b-1, 162a, 168b, 170a

fauna **5** 18a

soil **1** 24b, **2** 12, 289a, 333a, **3** 43a, 176a, 203a, 291a, 354a, **4** 18b, 95b, 136b, 161b, 200a, 261a, **5** 99b

site type **1** 26b, **2** 333a

tundra **4** 93a, **5** 18a

see also Ecology, plant, Forest types, Geographical Index

Veneer **1** 179a, 283a, **2** 225a, **3** 142a, 228, **4** 113a, 174a, **5** 120, 260b-1a

bonding **3** 228a, **5** 120a

discoloration **5** 260b-1a

drying **1** 283a, **4** 117b

impact strength **5** 42b

joining edge-to-edge **5** 263a

logs, treatment **5** 43b

manufacture **1** 283a, **2** 225a, **4** 113a

properties **4** 174a, **5** 121a

species **1** 179a, 283a, **3** 142a

statistics **4** 212b

see also Plywood

Virus diseases **1** 82a, **2** 85b, 191b, **3** 80b, 342b, **4** 58b, 250a, **5** 62a, 282

mosaic **3** 80b, **5** 62a

Vitamins

as growth regulators **2** 297b, **3** 200a, 214a, **4** 154a, 216b, **5** 91b, 164b

distribution in trees **4** 154a

in

buds **3** 199a

fruits **3** 66b, **4** 121b, **5** 193b

leaves **3** 66b, **5** 51b

seeds **2** 236b, **5** 130b, 252b

Volcanic deposits

fertilizing effect **1** 20b

succession on **3** 205a

Volcanoes, cause of fire **1** 126b

Volume **1** 105a, 192a, **2** 76, 163b, **3** 171a, **4** 61a, 62-3a, 134a, 195b, 257b, **5** 143a, 205a, 286

bark **3** 85a

branches **3** 85a

determination

graphical methods **1** 192a, **3** 171b

rule-of-thumb methods **2** 249b, **3** 85a

sampling method **4** 195b

units **3** 258a

Volume tables **1** 53a, 54b, 105b-6a, 192b, 298b-9a, **2** 76b, 162a, 249b-50a, 330a, **3** 172b, 259, **4** 62a, 195b, 257b, **5** 66a, 143b, 205a, 287a

assortments **1** 192b, 281b, **3** 259b

local **1** 299a, **2** 162a, **3** 172b, 259b

mine timber **3** 259

pulpwood **1** 298b, **3** 359b, **4** 257b

WAGES, forest workers' **2** 214b, 254a, 278b, **3** 263b, **4** 65b, **5** 210a

War damage Act **3** 182a, 265a

Waste liquor **1** 97b, 291b, **2** 67a, **3** 311b, 332a, **4** 48a, 176a, 182a

Waste wood

disposed **2** 240a, **4** 184b

peeler cores **3** 240a

sawmill inventory **5** 56a

slabs **1** 179b, **3** 152b

transporting **3** 239b

vener boards **3** 142b

see also Logging, waste

Waste-wood utilization **1** 51a, 101b, 179b, **2** 67, 155b, 239-40a, 303a, **3** 68b-9a, 155b-6a, 239-40a, 333b, **4** 48a, 51b-2, 71-7, 119a, 123, 184b-5a, 244, **5** 55b-8, 118b, 134b-5, 188b-9a, 272b

bibliography **4** 73

briquettes **2** 234a, 239b-40a, **3** 68b, 155b, 239b, **4** 45a, 119a, 185a, **5** 135a

building material **2** 239b, **3** 155b, **4** 123a

charcoal **3** 150b, 235b, **4** 119

chemical **5** 56a

fuel **1** 291b, **2** 155b, 234a, 239b, 320a, **3** 69a, 333b, **4** 52a, 244a

gelatinization **5** 188b

hydrolysis **4** 120

insulating material **2** 67a

moulding **4** 115a

plastics **1** 291a

pulping **2** 67a

see also Sawdust

Water relations of plants **1** 93b, 235a, 243b, **2** 31b-2a, 292b, **3** 198b, 335b, **4** 88b, 154a, 216a, **5** 90b-1a, 246a

see also Transpiration

Waterproofing wood **2** 312a

Wax **4** 244a

substitute **4** 183b

see also Bee-keeping

Weedkillers

ammonium sulphate **2** 245a

arsenical **1** 28a, 92a, 267a, **2** 41a, 138b, 215b, 245a, 299a, **3** 216b, **4** 105a, 228a, **5** 32a, 185a

Atlacide **2** 158b, 245a

borax **2** 158b

cyanamide **2** 245a

paraffin **2** 325b, **4** 228a

sodium chlorate **2** 245a, **3** 74a, **4** 125b

use in thinning **1** 92a

Weed trees and shrubs **2** 158b, 325a, **3** 74a, 160, **5** 32a, 77

control methods **2** 245a, **5** 77-80

Weight of trees **1** 23b, **4** 217a, **5** 17a

Well filters, wooden **5** 51a

Wheels, wooden **4** 38b

Wildings *see* Planting stock

Wildlife

conservation **1** 109a, 199a, 304b, **2** 180a, **3** 89a, 95b, **4** 65a, 139a

forage **1** 249b

management **2** 80b, **3** 266b, 355a

manual **5** 230a

survey **5** 244b

see also Game

SUBJECT INDEX

Wilt 2 120a, 194b, 246a, 326b-7a,
3 162, 250a, 4 57b, 5 139, 279b

Wind
damage 2 68a, 4 185b-6a
effect of
forest 1 74a, 127a, 2 113a, 4 84a
shelterbelts 4 29a
effect on
growth 5 89b
hurricane damage 2 118a, 205a,
3 117a, 121, 156a, 164b, 334a,
343b, 4 186a
protection from 3 241a, 5 136a
tunnels 2 280a
velocity measurement 3 242b
see also Salt spray, Shelterbelts

Windthrow 2 19a, 52b, 294b, 3 240b,
246a, 4 135a, 136b, 5 33a, 116a,
273a

Wire rope 2 147a, 224a, 4 37b
see also Cableways

Witches brooms 2 17b, 123a, 191b,
3 75a, 4 190b, 5 166a, 279b

Wood
bibliographies and general works
1 201a, 309b, 311, 2 43a, 3 189a,
5 34a
formation 1 272a
handbooks 3 218a, 5 33a
identification *see* Wood identifica-
tion
information on particular species
1 93, 168-9, 270a, 271, 2 43b-
5a, 217-8a, 300a, 306a, 3 48,
131-3a, 134a, 218a, 219b-20a,
306-9a, 4 30b-1a, 105-6, 107b,
168b-9a, 230-1, 5 33b-4a, 113,
180-1a, 256b-7a
potential as raw material 5 70a
substitute for metal 4 34a, 105a,
170a, 182a, 185b, 236a, 5 118b

Wood anatomy 1 81a, 93, 169b-72a,
271b-3, 2 44-5a, 140b-1, 218b-9a,
300b-1, 3 48b-51a, 133-4, 218b-
20a, 290b, 308-9, 4 31-2, 107,
169a, 174a, 230-1, 5 34-5a, 113,
181, 257b
crystalline structure 2 47a
effect of provenance 3 308b
fibres 1 172a, 272b, 273b, 2 47a,
3 49a, 319b, 5 93a, 257a
fossil wood 2 109b-10a
frost rings 5 136a
methods of study 1 174b, 271b,
2 46-7, 301b, 3 133a, 308b,
4 106b-7a, 230b, 5 113b
pits 3 308a, 5 34b
rays 2 46b, 3 48b, 133b, 218b-9,
312a
resin canals 1 95a, 2 46b
ring porosity 2 300b
spiral thickening 2 46a
taxonomic value 1 272a, 4 31b
tracheids 1 144b, 4 107a
tyloses 2 143a, 4 32a, 5 113b
vessels 1 169b, 171a, 272b, 2 47a,
3 134a, 199a, 4 230b-1a, 312a,
5 35a, 166b

Wood anatomy—*cont.*
wood parenchyma 4 31b, 32b,
107a, 231a
see also Anatomy, plant Cell wall
structure, Cellulose, Reaction
wood, Rings growth, Species
Index

Wood ash analysis 2 318b, 5 129a,
269a

Wood chemistry 1 45b, 171a, 174b-
5a, 276, 307a, 2 51, 143, 149a,
221b, 302-3a, 308a, 3 52b-3a, 136,
142, 221, 311b, 4 34b-5a, 114a,
185a, 5 37a, 46a, 115b-6a, 258b-9a
analysis 5 37a, 115b
bibliographies 1 276a, 3 189a
carbohydrates 5 258b-9a
composition of particular species
2 221b, 302b, 3 136a, 5 258b
effects of decay 3 54a, 5 39a
fats 1 50a, 3 136a, 4 51b, 109a
flocosoids 5 34b
iron 1 234a
manganese 1 234a, 5 258b
neoquassin 5 259a
nitration 3 221a
nitrocelluloses 5 258b
pectin 5 37a, 54a
pentosans 3 142b
pH 3 52b
phenols 5 258b
polysaccharides 3 53a, 5 37a
pterocarpin 2 143a
silica 5 257b
starch content 2 304a
stilbenes 4 35a
trace elements 3 53a
see also Cell wall, Cellulose,
Chemical constituents of plants,
Lignin, Resin, Wood extractives

Wood engraving 5 41a

Wood extractives 2 302b, 3 66a,
4 232a, 233b, 237a, 5 37b, 116a,
131b
effect on decay 5 116b-7a
see also Tannins

Wood finishing 2 276a, 4 41a

Wood flour 1 184b, 2 146b, 3 239b,
333b, 4 52a, 114a, 175a, 242b,
5 27a, 46a, 188a, 265b

Wood identification 1 93a, 271b, 2
140b, 301a, 3 49b, 189a, 219b,
307b-8, 4 32a, 105a, 107b, 230b-1,
5 34b, 113a, 181
key 1 12b

Wood, physical and mechanical
properties 1 40-4, 94-5a, 168-9,
170b, 172-4, 271b, 273b-5, 2
44-5a, 47b-51a, 142, 219-21,
301b-2a, 3 51-2, 134b-5, 220-1a,
309b-11, 4 33-4, 108, 170-1a, 232,
5 35a, 58, 170a, 181b, 185b, 256a,
257b
abrasion tests 3 220b
bending 1 45a, 2 148b, 308a
bibliography 2 47b
collapse 2 142a, 310a, 3 55b
combustibility 5 135b, 184b
dielectrical 5 1267b 21a,

Wood, physical and mechanical
properties—*cont.*
effect of
age 4 169
felling season 1 177b
growth factors 1 41a, 173, 272a,
2 142b, 305b, 5 181b, 182b
provenance 4 170b
steaming 1 100b, 2 220b
elasticity 4 33b-4a, 5 36, 258a
electrical 4 108a, 5 182a
genetic variation 3 202b
inheritance 1 237b
internal stresses 1 44a, 2 54a
moisture content 1 94b, 173,
274-5a, 2 48b-9a, 142a, 219-
20a, 301b, 3 51b, 61a, 134b-5a,
220a, 310a, 4 34a, 108, 117b,
170a, 234a, 5 35b-6a, 114b,
182a, 260a
particular species 1 40a, 42b,
94-5a, 172-3a, 273b-4a, 2 48,
140a, 218-9, 3 51a, 220a, 309b,
4 33a, 170a, 230b, 232a, 5 258a
permeability to
water 1 41b, 288a, 3 310b, 4 33a,
170b, 5 182a
X-rays 1 41a
resistance to chemicals 1 175a,
2 304b
shrinkage 1 41-2a, 94b, 173b,
274b-5a, 2 48b, 220b, 301a,
3 51b, 63a, 135a, 240a, 4 33b,
170b, 5 36a, 258a
specific gravity 1 173b, 273b-4a,
275, 2 49a, 60b, 142, 220a,
221a, 3 54a, 137a, 202b, 224b,
310b, 4 33, 108, 5 114b, 182a
swelling 1 275b, 5 36a
testing 1 94a, 2 47b, 3 309b, 4
33b-4, 108, 170b-1, 5 35a
texture 1 273a
thermal 1 42a, 288b-9a, 2 49b,
53b, 219-20a, 304b-5a, 3 55a,
139a, 220a, 224a, 4 170a, 240a,
5 35, 36b, 44a, 114a, 121a, 182b,
258a, 267b
see also Strength, Working pro-
perties and Species Index

Wood sugar 1 101a, 2 64b, 4 182a,
5 191a, 272a
see also Hydrolysis, wood

Wood tar *see* Distillation and
distillation products

Wood utilization *see* Forest products
and their utilization

Wood wool 2 57a, 5 265b-6a
drying 1 283a, 2 151a

Woodworking 2 56a, 3 309b, 5 118b,
262a
machining 1 45a, 178a, 5 84a
tools, cleansing agents for 4 212a

Working plans 1 125a, 196b-7, 302b,
2 80, 252b, 3 179b, 4 5, 64a, 5 145a

Working properties of wood 2 51a,
4 232b, 5 58b
see also Nails and nailing

Wound dressing 1 103b, 291a, 2 325b

Wound parasites 3 338b

SUBJECT INDEX

X-RAYS use in
 detection of
 decay 2 303b
 defects 2 153a, 3 55a
 wood borers 2 52b
 wood anatomy 2 141b
Xerophytes 2 198a

YEASTS 3 247a

Yield

 alignment charts 4 259
 assortment tables 2 78b
 mixed stands 2 32b
 prediction 4 197b, 258b
 regulation 1 55b, 165a, 196b,
 301b-2a, 2 80a, 163b, 3 88b,
 177, 179, 352a, 354b, 4 137b,
 5 68a

Yield—*cont.*

 by minimum diameter 2 333b,
 3 225-6a
 studies 1 53b, 4 196a, 258b
 tables 1 54b, 106b, 193b, 299b,
 300b, 2 77b, 331a, 3 87b, 175a,
 351a, 4 136b, 196b, 5 67b, 207a
 financial 1 299b

GEOGRAPHICAL INDEX

ABYSSINIA

Harar Province vegetation 3 291

Aegean Islands (Greece)

charcoal yield 4 94

macchia vegetation 4 94

Africa

arrow poisons 3 23

ecology 1 231

flora, *Guarea* species 2 27

forest(s)

administration 3 354

and labour 4 149

pulp species 1 46, 3 59-60

timbers 2 305

water and soil conservation 3 105

wild rubbers 5 132

Alabama

farm forestry 3 72-3, 4 64

forest

fires 2 266, 3 72-3, 4 187

laws 2 266

management 2 266

resources 2 8, 183 (3), 3 192, 4 213

taxation 4 139

trees 2 198

types 1 148-9, 5 102

littleleaf disease 4 247

Alaska

climate 4 18, 5 206

dendrochronology 4 258 (2)

hydroelectric resources 4 201

pulp and paper 3 193-4, 4 201

soils 5 99

vegetation 4 18, 5 99

Albania

forest problems 3 98-9

Alberta

fire

hazard 1 186

legislation 3 265

shelterbelts 2 117, 216

soils 4 152, 5 99

vegetation 5 99

Algeria

cork 1 49-50

forest types 1 266

tannin species 1 49

America

dendrochronology 5 213

flora 4 261, 5 23, 106 (2)

forest policy 4 261, 5 7-8, 70, 72

land-use planning 5 213

largest trees 3 41

timber(s) 1 271, 2 45, 218 (2), 3

134 (2), 220-1, 309, 4 32, 107,

230, 231, 5 34, 113, 181

exports, post-war 5 73

keys to 4 230, 5 113, 181

see also Latin, North, South and

Tropical America

Andaman Islands

management 3 100

report 1938-39 3 42, 57

Angola

afforestation policy 5 215

pulpwood 2 94

Antigua (West Indies)

forestry ordinance 4 139

Antilles

latex plants 5 133

mosses 5 241

natural resources 4 83

pteridophytes 5 21

vegetation 3 204, 4 19, 93

see also West Indies, and individual islands

Arctic

dendrochronology 3 86

timber line 4 218, 258, 5 159

Argentina

afforestation 3 106, 4 88

borer damage 3 224

charcoal 3 235, 327-8, 5 268 (2)

flora 3 292, 5 19

fodder trees 3 332

forest(s)

fires 5 275

laws 2 87, 3 181, 4 202, 5 273

protection 5 273

service 2 81, 93, 253, 3 181

types 2 185, 200, 3 261, 292,

293, 5 10, 232

minor forest products 5 53, 270

pulp and paper industry 4 265

rubber production 5 1-4

tannin industry 3 66, 4 265, 5 269

timber(s) 4 106, 108

trade 3 185, 261

war and forest industry 3 66, 5 232

Arizona

dendrochronology 3 86, 4 134, 258

forest types 2 291, 3 175, 204-5

fungus diseases 4 56

private forests 3 267

road transport costs 3 57-8

timber sales 5 207

Arkansas

delta forests 1 200

dendrochronology 4 196

forest statistics 3 357-8

hardwood resources and industries

2 183

livestock vs. forestry 5 292

logging costs 2 56, 306-7

mill work study 2 264

Pine vs. cotton 1 179

silviculture 4 224

volume tables, hardwood 2 249

Asia

flora 2 27, 4 21

Japanese timber interests 3 185

Assam

flora 2 26, 3 203 (3), 4 94

forest

management 4 83

reservation policy 3 18-9

resources 3 18-9, 4 83

types 1 25-6, 3 18-9, 4 94

silviculture 4 100

timber trade 2 90, 3 18-9

Australia

fire control 2 340, 4 188

flora 1 93

Australia—cont.

forestry 1 126

oil-bearing trees 1 291, 2 237,

4 50, 5 53

paper industry 3 269

producer gas 2 234, 314, 3 63-4,

64, 269, 4 46, 47 (2), 49, 165,

181, 265, 5 50

rubber production 5 53

silviculture 5 246-7

tanstuffs 3 331

termites 1 251, 181, 2 172, 4 41-2,

5 25

timber(s) 1 6, 42, 2 44 (3), 45, 49,

140-1, 218 (2), 220, 300, 308,

3 48, 95, 132 (3), 134, 218 (3),

307, 308, 4 30-1, 169, 230, 235,

5 33-4, 40-1, 187

for special purposes 1 179-80,

3 65, 152, 218, 236, 237 (2),

329, 4 52, 120, 236, 5 263,

264, 267, 269

grading 3 330, 5 191

identification, card key 4 32

imports 3 18

preservation 1 6, 4 42-3

seasoning 1 6, 47, 3 327, 5 267

shrinkage 2 220, 5 267

steam bending 2 51 (2), 172

wood

anatomy 1 93, 2 140, 5 33, 40-1

borer(s) 2 172, 264, 3 138, 145,

321-2, 4 36, 41, 43, 116,

5 246

hydrolysis 3 69

see also individual states

Australian Capital Territory

fire problem 1 187

Austria

forest

grazing 5 73

ownership 3 41-2, 4 65

policy 4 65

types 2 24-5, 25

producer gas 4 48, 181

selection forest 3 41-2, 4 162

timber utilization 1 45, 4 51

Azores

vegetation 3 203

BALKAN STATES

timber

economy 2 267

exports 1 200

production 3 183

Baluchistan

administrative report 2 180

inspection tour 2 279

Barbados

termites 2 311

Basutoland

erosion control 4 152 (2)

Bechuanaland

exotics 5 109

forest types 1 226

GEOGRAPHICAL INDEX

Belgian Congo
 barkbeetles 3 256
 bush fires 2 114, 5 275
 deforestation 1 14
 essential oils 5 194
 flora 1 148
 forest(s)
 and rainfall 1 14, 15
 area 1 14
 policy and laws 1 14, 56-7, 109
 gums 5 271
 reforestation 1 39-40, 56-7
 timbers 1 94
 timber exports 1 94
 Belgium
 fibreboard production 4 212
 forest
 fires 2 72
 taxation 2 82
 logging 2 67
 timber industry in war 3 192
 Bengal
 erosion 1 305
 essential oils 5 52
 flood control 1 305, 2 69
see also East and West Bengal
 Bermuda
 woodlands 2 280
 Bihar
 afforestation 1 91
 erosion control 2 88, 5 233
 flora 4 94
 forest
 management 2 111, 254
 types 1 24
 Bolivia
 flora 4 21
 natural resources 4 83
 rubber production 5 1-4
 timber trade 3 185
 vegetation types 4 93
 Bombay
 erosion 1 133, 2 169
 forest
 grazing 1 133, 290, 2 82, 255
 management 3 19, 22
 types 1 125, 3 19
 Bonin Islands (Japan)
 fungi 2 289
 Borneo
 flora 1 150, 246 (2), 249, 2 27
see also British N. Borneo, Sarawak
 Brazil
 Brazilian Pine Institute 3 179
 Eucalypts 3 128, 4 27, 195-6, 5 281
 flora 1 84, 147, 149, 249, 2 127, 3 37, 51, 115, 206, 294, 4 21, 159, 223, 5 102, 132, 244, 272
 forest(s)
 coastal 1 84, 147
 department, Pernambuco 5 67
 products 1 271, 3 293, 331, 4 121, 202, 5 6, 244, 272
 programme 3 264
 service 3 264, 5 67
 soils, and burning 1 78
 insect pests 4 193
 land-use planning 5 73
 national parks 5 211-2
 producer gas 4 265

Brazil—*cont.*
 pulp and paper 3 128, 4 140, 5 215
 rubber production 5 1-4
 timber(s) 1 274, 2 47-8, 127, 300, 3 185, 4 33, 5 34, 113
 war and forest industries 5 5-6, 75
 British Cameroons
 exotics 2 208
 forests and forestry 3 280-1
see also Cameroons
 British Colonies
 erosion 1 79, 233
 forest
 administration 2 257
 departments 2 164
 development 2 276
 finance 4 198
 policy 2 255, 257, 4 198 (2)
 forestry 1 3-4, 63, 2 257, 3 354
 soil conservation 1 79, 233
 British Columbia
 aerial survey 2 251, 4 138
 bio-climatic charts 4 156
 cascara bark production 4 68, 243, 243-4
 Christmas tree farming 5 130
 exotics 3 119
 fauna 5 240
 fire control 2 299, 334, 3 71, 4 125, 5 69
 forest
 management 3 179, 5 68, 145
 policy 3 182, 5 146, 149
 problems 4 149
 statistics 2 110, 172, 5 145
 types 2 251, 3 115, 5 240
 fungus diseases 4 55
 manufacturing industries 3 18
 natural regeneration 1 32, 3 121-2
 palaeoecology 2 7, 109
 pulpwood 1 306, 5 55
 railway sleepers 3 146
 reforestation 3 184
 soils 5 99
 timber
 exports 2 227
 grading 3 153
 production 2 172, 5 169
 properties 3 222
 wood waste utilization 1 101, 5 55
 British Commonwealth *see* British Empire
 British East Africa
 erosion control 1 78
 fibre plants 5 272
 forest types 4 19
 medicinal plants 3 66
 plant names, Swahili 3 14
 rubber plants 4 122
 saponin plants 4 243
 shelterbelts 3 217
 tanstuffs 3 237
 termites 5 39
 timbers, properties and uses 1 94
 tsetse control 1 63-8, 3 261, 5 213
 Tung oil 1 291
 British Empire
 camphor production 3 238
 insect parasite service 5 200-1
 seed origin control 3 187-8
 tanstuffs 3 66, 331

British Empire—*cont.*
 timber(s)
 decay resistance 1 43
 for plywood 2 307, 3 228, 4 174
 handbook 1 311, 5 33
 notes on 1 169
 trade names 1 12
 war substitutes for softwoods 1 271, 2 140 (3)
 British Guiana
 exports 1 113
 flora 1 246, 4 21, 5 106
 forest types 3 31, 4 93
 geology 3 31
 logging 1 113, 3 224
 timber production 1 314
 war substitutes for softwoods 2 140
 British Honduras
 aerial survey 2 78
 chicle 5 10, 54, 133
 flora 5 173
 forest types 2 78, 4 17-8, 157, 5 10
 forestry 1 227
 logging and transport 1 113, 3 56
 rural planning 1 55
 soil survey 3 285
 timber(s)
 durability 3 222
 exports 2 172, 5 10
 for sleepers 3 65
 trade reports 2 180, 3 18 (2)
 war substitutes for softwoods 2 140
 British Isles
 vegetation 1 202-3, 2 124-5
 British New Guinea *see* New Guinea
 British North Borneo
 plant names 2 108, 276
 sawmilling industry 2 280
 timber(s)
 for pulpwood 1 284
 production 1 315, 2 339
see also Borneo
 British Somaliland
 forest products 3 291
 incense gums 3 155
 vegetation 3 291
 Brunei
 erosion 1 20
 shifting cultivation 2 83
 timber production 1 211
see also Borneo
 Bulgaria
 forest(s)
 management 4 196
 policy 3 354
 private 1 199
 statistics 3 354, 4 196, 5 9
 types 1 148, 226
 forestry bibliography 4 10
 'Mulberry wool' production 4 265
 plywood and veneer industry 1 179
 Poplar growing 5 215
 timber(s)
 exports to Germany, war-time 1 200
 for pitprops 3 52
 properties 3 51
 Burma
 aerial survey 2 251

GEOGRAPHICAL INDEX

Burma—*cont.*

- flora 1 149, 2 27, 3 35–6, 292, 4 96, 97
- forest types 3 291, 4 161
- fungus diseases 2 52
- insect pests 2 30, 173
- regeneration markings 4 161
- soil catenas 2 14
- stream training 3 289
- taungya 3 351
- timber(s)
 - borers 3 313
 - exports 1 6
 - for marches 1 114
 - seasoning 1 43, 2 151
 - tidal storage depot 5 40
- Tung cultivation 1 291
- war fellings 5 215
- yield tables, Teak 2 331

CALIFORNIA

- aerial survey 5 288–9
- afforestation 5 109
- cork production 5 51
- dendrochronology 3 86 (2)
- diseases of ornamentals 5 59
- enumeration methods 5 205
- exotics 3 153, 154, 4 221, 243, 5 51, 109, 203
- fire control 2 323–4, 325, 3 243, 245, 336, 4 124, 187
- flora 3 32, 5 19
- forest
 - laws 4 65
 - management 4 65, 137, 5 208
 - policy 3 264, 5 71–2
 - types 1 131, 246, 3 97, 4 93, 187, 219–20
- fungi 4 189, 248–9
- grazing 5 73
- insect pests 3 167, 344, 4 193, 253, 5 202
- land use 4 214, 5 288–9
- palaeoecology 4 11, 82
- Redwoods 2 184–5
- rubber plants 5 132–3
- shelterbelts 3 306
- soils and physiography 4 214
- timber(s)
 - coastwise transport 2 156
 - for tobacco pipes 4 182
 - grading 2 240, 3 153
 - in local economy 5 70
 - industry 1 271, 3 280
 - production 1 225, 2 184, 4 12
 - sanitation salvage 5 141, 202
 - second-growth 3 58
- tree identification key 5 19
- unemployment relief 5 71–2
- volume tables 1 131, 3 172, 4 93, 187, 5 205

Cambodia *see* Indo-China

Cameroons

- charcoal 1 290
- copals 1 184
- exotics 2 208
- forests and forestry 3 280–1, 4 13
- logging 3 313–4

Cameroons—*cont.*

- timber(s)
 - descriptions 1 169
 - for pulp 1 27, 3 60
 - supply to Europe 5 293
 - utilization 4 13
 - see also* British Cameroons, French Cameroons
- ## Canada
- aerial survey 1 55, 2 251, 4 138, 259–60
 - bibliography, timber industry 1 282
 - co-operative marketing 5 214
 - dendrology 3 203, 4 18
 - diseases of trees 1 143, 4 55, 246–7, 5 199
 - farm forestry 2 83, 3 88
 - fire
 - control 2 70 (3), 71 (2), 72, 243 (3), 3 71
 - losses, by Provinces 5 86
 - research 1 28, 2 30, 3 71
 - statistics 2 323, 5 86
 - forest(s)
 - conservation textbook 4 261
 - exploitation under French regime 2 181
 - industries and war 3 183, 184, 4 138, 201, 202, 5 71 (7), 75
 - see also* industry below
 - management 2 164, 3 88 (5), 4 138, 200, 5 288
 - policy 2 80, 5 70, 291
 - private 2 164
 - production 2 8, 3 99 (3), 5 86 (2), 5 215
 - products and products research 1 6, 2 43, 172–3, 5 293
 - protection 2 242
 - research 2 7
 - resources and 1914–18 war 2 183
 - statistics 1 224, 2 110, 169, 4 12, 82 (2), 5 86 (2)
 - types 1 24, 2 70, 3 115, 4 95, 167–8, 5 99, 102, 219–20
 - flora 4 18 (2)
 - fuelwood, wartime prices 4 201
 - industry(-ies)
 - ‘excelsior’ 3 18
 - flooring 3 17–8, 4 147
 - hardwood distillation 4 12
 - wooden-ware 3 18, 4 12
 - wood-using 2 182 (2), 3 99, 4 147 (6)
 - see also* forest, pulp and paper industry, and timber
 - insect pest
 - control 1 304, 3 166, 5 141, 200–1, 284
 - damage 2 327, 4 129
 - larvae 4 160
 - survey 2 30, 4 129, 5 140, 140–1
 - logging 2 55, 3 57, 4 173
 - palaeoecology 4 82, 5 8
 - Pest-control Products Act 1 304
 - producer-gas vehicles 4 181, 5 50
 - provenance trials 3 187
 - pulp and paper industry 1 46, 2 8, 3 18, 184, 279, 4 39, 140, 5 86

Canada—*cont.*

- pulpwood 4 11–12, 112, 200, 213
 - sawmills 3 280 (2)
 - silviculture 1 28, 91, 2 30
 - soils 5 99
 - timber(s)
 - exports 3 18, 184, 5 75
 - grading 5 75
 - identification 3 308, 4 105
 - preservation plants 4 176
 - production 2 183, 4 140, 5 215
 - properties and uses 2 260, 3 152, 5 41
 - trade with U.S.A. 1 207
 - trees 3 95, 203, 5 168, 229
 - war *see* under forest industries and forest resources, fuelwood, wood anatomy 3 308, 4 105
 - see also* individual provinces
- ## Celebes
- copal industry 3 238–9
 - forest flora 2 289, 3 238–9
 - see also* East Indies
- ## Central America
- new tree species 2 26, 127, 3 36 (2), 4 158–9, 159, 5 169
 - tanstuffs 5 269 (2)
 - see also* Latin America
- ## Central Provinces (India)
- fodder trees 2 33
 - forest(s)
 - and rural welfare 1 303
 - types 2 199, 4 93–4, 5 168–9
 - grazing regulations 2 255, 4 137
 - ornamental trees 3 303
 - volume tables 5 143
- ## Ceylon
- Balsa production 5 149
 - Cassia bark sources 5 131
 - forest policy 1 199
 - gums and resins 2 66, 237
 - insects 2 30, 265
 - Land Development Ordinance 1 199, 4 139
 - oil-bearing plants 5 271
 - rubber research 4 183, 5 53
 - soils 1 132, 4 87
 - timber properties and uses 2 264
 - trees 1 84, 5 109
- ## Chile
- afforestation 2 267, 4 68, 202, 5 75
 - forest(s)
 - National Council 5 293
 - statistics 3 101, 359
 - types 1 14
 - plant diseases 5 137, 276
 - plywood development 5 75
 - timber industry 2 93, 3 101, 184, 185
 - wood properties 5 181
- ## China
- Cassia oil 5 132
 - flora 2 27, 3 294 (2), 4 97 (2), 5 105, 172, 172–3, 240
 - fungi 3 341, 5 139–40, 243
 - insect pests 1 154, 3 169, 345
 - silviculture 3 300, 4 98
 - tanstuffs of Szechwan 4 121
 - see also* Manchuria

GEOGRAPHICAL INDEX

Colombia
afforestation 4 101, 202
flora 3 295, 4 21, 97, 5 102, 170
fodder trees 4 123
forest
 industry 4 202
 policy 4 202
 types 5 158-9
plant products 4 93, 5 158-9
rubber production 5 1-4
timbers, properties and uses 5 170
vegetation 4 93

Colorado
dendrochronology 4 196, 258
erosion 3 287
flora, Willows 4 97
forest types 4 19, 5 28
grassland hydrology 3 287
palaeoecology 3 97
succession 4 104

Congolese Republic *see* Belgian Congo

Connecticut
erosion control 1 306
forest
 history 3 121
 laws 3 90
 succession 2 25
insect pests 5 62-3
site quality, Oak 2 79

Costa Rica
forest types 4 83, 5 158
rubber production 5 1-4
timbers 4 83

Crete
soils 1 128

Cuba
afforestation 3 128
flora 3 32, 4 159
forest types 5 240
timber trade 3 185

Curaçao
Divi-divi plantations 5 269

Cyprus
forest
 benefits 4 65
 grazing 1 316
 laws 1 199, 316
 policy 1 303, 2 334
 production 1 114, 314
grazing 1 316
timber
 mining 1 114, 314
 production and consumption 1 114, 314
tree planting 1 316, 3 216
volume tables, Pine 4 195

Cyrenaica
exotic and native forest trees 2 24

Czechoslovakia
forest
 management 4 63
 ownership (Bauernwald) 3 193
 types 1 24-5, 4 18, 157
seed control 2 271
see also Slovakia

DAHOMEY
forests 1 14, 125

Delaware
forest laws 3 181
fossil conifers 3 97

Denmark
afforestation 1 163, 163-4, 265, 3 46, 5 250
arboretum 2 181
exotics 1 139, 142, 5 174-5, 175, 250-1
forest
 co-operatives 2 331
 economics and statistics 1 123, 2 7, 3 184, 5 231
heathland
 plantations 1 163, 163-4, 265, 5 250
 types 1 253-4
palaeoecology 1 163
producer-gas fuel 4 202, 265
seed origin 5 252
soil fauna 3 283
thinning review 2 138
tree breeding 1 136, 5 250-1
yield tables, Oak 5 207

Dominica
forest(s) 1 227
 types 5 100
Palms 4 159
useful plants 4 157

Dominican Republic
forest
 insects 3 345
 laws 2 112
 resources 3 32
 service 2 9
 types 1 26, 2 112, 3 101

Dutch East Indies *see* East Indies

Dutch Guiana *see* Surinam

EAST BENGAL
flora 3 114
forest types 2 8-9
silviculture 1 13

East Indies
forest
 enumerations 3 193
 ordinance, draft 3 356
forestry education 3 190
Mangroves 5 193
minor forest products 2 65 (2)
nurse species trials 3 297
plantations as firebreaks 1 126
pulpwood species 1 314, 2 308-9
regeneration policy 1 305
resins (daman and copal) 4 50
soil fertility 1 20
tanstuffs 3 330-1, 5 130
timber(s)
 calorific values 1 42
 for plywood 1 314
 production 1 314
see also individual islands

Ecuador
exotics 1 169
forest
 resources 4 83-4, 5 10
 types 4 83-4, 93, 5 19
rubber production 5 1-4
timbers 1 169, 4 169

Egypt
anatomy of timbers 1 93
insects 5 286

Eire *see* Ireland, Republic of

El Salvador
rubber plantations 5 4

England
afforestation 1 223
forests 1 124, 4 12
glaze damage 4 53-4
pollen analysis 3 96-7
reforestation 4 227
see also Great Britain

Eritrea
forestry problems 1 226
see also Italian E. Africa

Estonia
management policy 1 108
producer gas etc. 4 140-1
timber preservation 2 94
wartime transport by floating 4 140

Ethiopia *see* Abyssinia

Europe
afforestation 1 207
dendrochronology 4 63
fibreboard production 4 212
forest(s)
 climatic classification 1 228
 communal 1 304, 5 291
 distribution 2 7
 insects 2 127
 private 1 207
 products, co-operative marketing 5 124
 under German occupation 5 291-2
poles, preservation 2 62-3
sawmilling in north 4 175
seed control 2 271-5, 5 252
timber
 supply from West Africa 5 293
 trade and war 3 357, 359, 4 67, 141

Fiji Is.
flora 4 97, 5 244
Kauri gum 3 154
Native Lands Ordinance 3 181
timbers 1 314

Finland
aerial photographs 5 289
cellulose production 4 175
exotics 5 287
fibreboard production 4 212
forest(s)
 administration 1 56 (2)
 grazing 5 192
 industries 1 282
 maps 5 229
 policy 5 212
 Research Institute 1 72
 resources 2 276-7
 roads 1 51
 statistics 2 182
 town 5 292 (2)
 type and soil type 5 162
 village 2 277
forestry 2 108
nature reserves and parks 5 291

GEOGRAPHICAL INDEX

Finland—*cont.*

- palaeoecology 4 82
 - pulpwood industry 2 277, 277–8
 - shifting cultivation 2 282
 - silviculture 1 32, 40, 2 30, 5 178, 178–9
 - timber
 - industry and markets 2 90, 5 293
 - transport 5 261–2
 - vegetation types 3 354, 5 170
 - war damage to forests 5 286
 - wartime labour 4 265–6
 - wood fuel 2 277
 - wood industries 5 156
 - woodman's handbook 3 140
- see also* Lapland

Florida

- ecology 3 32, 5 101
- exotics 3 212, 5 23
- farm forestry 4 64, 5 69
- forest 2 198, 3 32, 4 21
- forest
 - statistics 4 213
 - types 3 32, 5 101, 175
- fungi 4 221
- insect pests 5 283
- private forestry 4 259
- pulpwood 4 175
- tanstuffs 5 193

Formosa (Taiwan)

- Bamboos for pulp 4 175, 5 45, 123
- tannins 3 66, 4 49

France

- afforestation 4 203
- fibreboard production 4 212
- forest(s)
 - des Bertranges 1 226
 - laws 2 260–1, 4 68, 5 252
 - statistics 4 82
 - types 1 226, 3 32, 4 12 (2), 94, 213 (2)
- palaeoecology 2 7
- producer gas 1 111, 290, 3 150, 4 12–13
- pulp and paper industry 1 98, 2 33
- reforestation 1 264–5
- resin tapping 1 50–1
- seed certification 5 252
- termites 5 39
- timber
 - impregnation 2 60
 - mining 2 260
 - sales (1938) 1 123
 - seasoning 2 85
- war and forestry 4 68

French Cameroons

- charcoal 1 290
- forests 4 13
- see also* Cameroons

French Colonies

- aerial reconnaissance 1 55
- medicinal products 2 155
- producer gas 1 290
- timber production (1937) 1 51, 200, (1938) 1 200
- war and forest production 1 303

French Guiana

- vegetation types 4 93

French Niger Colony

- forests 1 14

French Somaliland

- flora 2 24

French Sudan

- plant geography 1 146

French West Africa

- aerial reconnaissance 1 55
- forest(s)
 - and forestry 1 14
 - types 1 14, 125
- vegetable fuels 1 290

GEORGIA

- farm forestry 4 64, 5 68–9
- forest
 - grazing 5 129
 - statistics 3 18, 4 12, 213, 5 157
 - types 3 18, 5 129
- Seed Law 3 302
- site-quality map 2 252
- trees 3 114, 4 18

Germany

- afforestation 1 15, 4 200
- cellulose consumption 3 185
- diseases 5 259–80
- ecology 1 148, 3 296
- enumerations 1 54
- exotics 1 39, 161
- farm forestry 1 310, 2 81
- fibreboard, market and production 4 148, 212
- forest(s)
 - accountancy 2 80, 4 198
 - and war 3 269, 4 69, 203, 5 76, 215, 292
 - history 3 118, 293, 296, 4 11, 138
 - laws 2 273, 3 90, 180, 181, 265
 - maps 1 195–6
 - research 1 53, 122 (2)
 - rights 1 57–8
 - selection 3 41–2
 - statistics 1 55, 123, 2 7, 3 269, 5 215
 - types 1 30, 148, 3 34, 100, 118, 204, 4 94, 213

insect pests 4 194

labour 3 181, 5 261

logging, mechanized 5 55

palaeoecology 3 15, 4 82 (2)

producer gas 3 185, 269, 4 47, 48, 181, 266

pulpwood 2 149, 3 185

railway sleepers 5 266

salvage fellings (1800–1935) 3 305

seed-certification 2 271–4

silviculture 1 22, 39, 161, 206, 3 296, 5 246

soils 3 38–9

state forestry 3 117, 354

storm damage 3 241, 269, 334

tanstuffs 3 153, 331 (2), 4 49

timber

market control 1 109

research 1 122, 4 168, 5 33, 256

utilization, chemical 1 45, 4 168

war and forests 1 200, 2 94, 3 185, 269, 4 69, 203, 5 76, 215, 292

Gold Coast (Ghana)

- forestry and Cacao 2 91
- fungi and plant diseases 2 284

Gold Coast (Ghana)—*cont.*

- minor products 5 293
- timbers 2 90, 3 183, 307, 5 186
- vegetation and climate 1 108

Great Britain

- afforestation 1 39, 223, 3 22, 34, 43, 5 30, 104, 112
- bibliography, flora and fauna 4 81
- census of woodlands 1 4–5, 124
- charcoal 5 181 (2)
- ecology 1 202–3, 2 124–5
- education 1 12–3, 5 211
- exotics 3 350, 4 224, 257, 5 58, 104, 171

fauna 2 108

- financial returns 1 107 (2), 5 171
- forest(s)

and war *see* war *below*

policy 1 4–5, 5 146, 211 *See also* private forestry *below*

research 5 211

statistics 5 211

types 1 124, 202–3, 2 124–5, 4 12, 18, 93

forestry aesthetics and recreation 4 261

insects 1 250, 2 74, 223, 3 117, 4 224, 5 202, 245

land use 5 72, 213

national parks 1 199, 5 211

nature reserves 5 146–7

palaeoecology 1 202–3, 2 124–5, 181, 3 15, 96–7, 4 11 (2), 5 8, 230–1

phenology 2 180, 3 14, 4 24, 211

pit props, home-grown 1 6, 2 231, 3 259, 4 242

plywood 3 228, 5 121

post-war

building timber 4 263

private forestry

economics 2 165, 3 88, 178, 5 211

policy 3 178, 180, 4 66 (2), 5 146, 211

state assistance 2 165, 3 178, 264, 4 199, 5 211

state control 2 165, 3 178, 180, 264, 265, 4 66

taxation 3 91 (2), 264, 5 211

training 2 165, 4 211

producer gas 4 47 (2), 181

silviculture 2 108, 211, 4 226

soils 1 39, 3 22, 34, 43

storm damage 4 53–4, 245

taper tables 2 162

timber(s)

building 4 123, 263

grading (home-grown hardwoods) 3 66, (stress) 3 152–3, 330, 4 182, (structural timber) 3 237, 4 182

home-grown 1 311, 3 131, 218, 5 214

imports 1 200, 2 110, 3 279

marketing 1 110, 2 261

mining 5 182–3, 190, 191 *see also* pit props

volume tables 2 162

GEOGRAPHICAL INDEX

Great Britain—*cont.*

- war
 - Damage Act 3 180, 182, 265
 - Defence Regulations 3 90
 - dislocation of trade 4 66
 - economies in timber 4 203
 - replanting 2 261, 4 102, 227
 - supplies of newsprint, kraft and cartons 4 68
 - threat and forestry 1 108
 - use of forests 3 265, 5 213-4
- see also* British Isles, England, Scotland, Wales

Greece

- forest(s)
 - and exploitation 1 226, 2 267, 340
 - co-operatives 1 198, 2 94
 - law 1 199, 2 267
 - policy 1 198, 2 340
 - protection 2 267
 - statistics 3 17
 - types 3 17
 - grazing regulation 3 17
 - producer gas 2 340
 - resin products 1 184
- see also* Aegean Islands, Crete
- Grenada (West Indies)
 - forestry 2 9
- Guatemala
 - flora 1 149, 4 21
 - forest types and vegetation 3 193, 198, 4 83, 5 169
 - plant resources 4 83
 - rubber production 5 1-4
 - timber industry 4 82

Guiana

- vegetation types 4 93

HAITI

- erosion 1 265, 2 9
- forest
 - resources and requirements 2 9, 111
 - types 1 126
 - rubber plantations 5 4
 - timbers and utilization 1 126

Hawaiian Is.

- ecological survey 1 149
- exotics 4 20
- flora 2 198, 4 18
- forest(s)
 - role 5 73
 - types 1 147-8
- grazing 5 62

Hispaniola *see* Dominican Republic and Haiti

Honduras

- plant resources 5 70
- rubber production 5 1-4
- vegetation types 4 93

Hungary

- afforestation 3 128-9, 4 103
- bark beetle parasites 5 63
- forest
 - devastation and floods 4 215-6
 - laws 1 108, 109
 - survey 3 353
- forestry 4 12

Hungary—*cont.*

- groundwater and tree vegetation
 - 2 12
- szik soils 3 128-9
- timbers 3 135, 5 36
- Hyderabad
 - shifting cultivation 5 148

ICELAND

- exotics 2 35
- forests and forestry 1 155

Idaho

- ecology 3 205
- fire danger 3 242
- forest
 - statistics 2 184, 3 193, 5 158
 - types 2 25-6, 3 87
- grazing and conifer regeneration 5 140
- leaf diseases 5 281
- management, Potlatch forest 4 137-8
- miocene flora 4 11
- succession 3 205, 5 9
- timber production 1 224, 2 184, 3 100

Illinois

- afforestation 3 215
- diseases 2 194, 5 282
- forest trees 3 292
- palaeoecology 1 224, 4 212
- preservative-treated wood 2 232

India

- afforestation 2 335
- Bamboos 5 191
- cableways 2 321
- ecology 1 246, 5 238
- erosion control 2 335, 4 15, 5 162
- flora 4 96, 97
- fodder trees 2 320, 5 54-5
- forest(s)
 - and war 3 279, 4 147, 5 74, 230
 - history 2 164, 3 95
 - policy 2 334, 5 70, 290-1
 - research 2 109, 5 25
 - statistics 2 8, 3 99
 - types 1 151, 246
 - utilization 4 29-30
- fuelwoods 5 269
- fungi 4 56, 5 278
- insect(s) 1 28, 250-1, 291-2, 292, 2 30, 3 295, 4 22, 5 24, 25, 107
- insecticides 4 183
- minor forest products 1 291, 2 180, 3 239, 332, 4 29-30, 49-50, 121, 5 51, 52, 53, 55, 134, 194, 195, 271
- plywood and veneers 1 283, 4 113, 5 35, 120
- poles 1 6, 2 63
- producer gas 2 90, 4 118, 119, 266, 5 127, 128, 190, 268 (2)
- pulpung materials 1 6, 2 90, 5 44
- railway sleepers 1 44, 48, 290
- rotations 1 196
- shelterbelts 4 15
- silviculture 1 111, 3 210, 5 25
- termite control 4 254

India—*cont.*

- timber(s)
 - commercial 3 306
 - fire resistance 5 184
 - for special purposes 1 49, 283, 3 329, 4 48, 49, 113, 168-9, 171, 5 35, 113, 120, 181, 195-6
 - grading (stress) 4 182
 - growth rings 1 171, 2 301, 4 108
 - identification 4 29-30, 231 (2)
 - laminated 5 186
 - moisture content 4 108, 5 114
 - preservation and preservatives 1 287, 3 321, 4 29-30, 176
 - research 1 6
 - seasoning 2 59, 4 29-30, 117, 242, 5 126
 - storage 5 40
 - strength 2 50, 3 220-1, 4 108, 5 187
 - thermal conductivity 4 170, 5 114
 - uses 1 44-5, 2 265, 3 306, 4 29-30, 5 212
- war and forestry 3 279, 4 147, 5 74, 230
- see also individual states etc.*

Indiana

- ecology 1 75, 129, 246-7, 3 191, 4 95, 5 103
- forest
 - laws 1 304
 - types 1 75, 246-7, 3 191, 4 95, 5 103
- grazing 2 255
- ornamental trees 3 303
- palaeoecology 3 191, 4 11, 212, 5 86
- shelterbelts 3 217 (2), 3 306, 5 256
- termite control 4 41
- timber marketing 5 293

Indo-China

- charcoal burning 1 290
- climate and forests 1 80
- dyes 4 49
- flora 2 27, 126, 4 96 (2), 5 105, 169, 172-3
- insect pests 4 133
- mining-timber, supply 4 27-8
- tannins 4 49
- Tung oil production 1 291, 2 66

Indonesia *see* East Indies

Iowa

- climate 3 102, 5 89
- co-operative management 2 241
- flora 4 94
- forest types 4 83, 5 240
- timber defects 2 53-4
- vegetation 5 242

Iran

- forest
 - statistics 5 215
 - types 5 215
- vegetation (photographs) 1 83

Ireland, Republic of

- forest
 - statistics 2 88, 3 192, 5 156
 - types 1 84
- palaeoecology 5 230-1

Israel *see* Palestine

GEOGRAPHICAL INDEX

Italian East Africa
 flora 2 26, 126, 238
 forest products 1 306
 trees and timbers 1 150, 248, 271

Italian Somaliland
 vegetation 1 147

Italy
 afforestation 1 265, 3 279
 climate and soils, Apennines 1 159
 exotics 2 77, 3 175, 4 98
 fibreboard production 4 212
 forest
 statistics 1 200, 3 279, 4 82, 203
 types 4 82
 fuelwood control 3 359, 4 203
 producer gas 3 359, 4 47
 reforestation 4 103
 resin production 2 240
 sawmilling statistics 5 231
 seed problems and tree races 1 138
 shelterbelt species 4 229
 timber consumption 3 16
 wood distillation 3 234

Ivory Coast
 forest types 1 14
 forests and timber supplies 1 14

JAMAICA
 afforestation 2 89, 127
 erosion control 1 20
 exotics 3 38
 forest
 area 2 88
 policy 1 126, 2 82, 5 70
 types 1 126, 5 19
 forestry 1 227
 railway sleepers 2 90
 shingles 5 41
 tanstuffs 3 153
 timber species and uses 2 89, 127, 3 307

Japan
 erosion 1 292
 forest
 areas 2 108-9
 fires 1 292
 statistics 2 108-9, 3 99
 fungi 2 52, 245, 3 76, 5 116, 219
 insects 1 250, 2 122, 3 55, 252, 313, 347
 lignin research 4 109
 pulp and paper 1 285, 2 149-50, 3 60, 142, 4 39, 5 45
 rayon 2 308
 tannins 3 66, 4 49
 timber
 control 3 99
 interests in S.E. Asia 3 185

Java
 choice of species 1 27, 4 227, 262-3
 erosion 3 288 (2)
 evaporation and run-off 3 287
 forest(s)
 history 4 262-3
 military value 4 262-3
 policy 1 80-1, 3 356-7, 4 262-3, 263, 264
 "State" (legal definition) 3 356
 fuel prices 4 264

Java—*cont.*
 hydrology 1 20, 80-1, 81, 3 197, 287, 356-7, 288 (2), 4 262-3, 263
 insect pests of seed 3 254
 kapok utilization 5 134
 oil-bearing plants 1 26, 80-1
 reforestation, Madura 3 303-4, 4 227
 tannin 1 80-1
 Teak survey, 1860-71, 3 191
 termites 4 234
 timber
 prices 4 264
 production 1 314
 working plans 1 316
see also East Indies

Jugoslavia
 dendrology 3 32
 ecological research 1 148
 flora 4 96
 forest(s) 2 110
 Krk island 3 32
 policy 2 341, 3 264
 products exported 1 306
 statistics 2 269, 5 231
 timber exports, wartime 1 200

KANSAS
 farm forestry 3 88
 frost injury 3 156
 shade tree pests 3 348
 shelterbelts 2 299

Kashmir
 fodder plants 4 184
 marketing 2 339
 newsprint species 5 44
 pulpwood 1 114
 soils 1 128
 timber control 1 114

Kentucky
 flora 4 219, 223
 forest types 2 126, 4 213
 oil-bearing plants 5 271
 shade trees 5 29

Kenya
 flora 3 14
 forest
 policy 5 213
 types 1 147, 2 199
 land use 5 213
 oil-bearing plants 4 50-1, 122
 plantation management 4 64
 Swahili plant names 3 14
 trees with edible products 1 133
 timbers 4 34, 5 191
 war and forestry 4 200, 5 213
see also British E. Africa

Korea
 flora 2 198

LAOS *see* Indo-China

Lapland
 pollen analysis 5 155
 vegetation types 5 170

Latin America
 conservation, fauna and flora 4 261
 forest legislation 4 199

Latin America—*cont.*
 rubber production 4 1-4, 5 168
 timber trade 3 185, 4 66-7, 67
see also Central America, South America

Latvia
 forest
 "days" 2 94
 pests 2 327-8
 soils 1 78
 statistics (1937-8) 1 211
 types 4 18
 silviculture 4 136
 wartime
 resort to floating 4 141
 sawmill and plywood production 4 141

Lebanon
 Willow species 2 27

Libya *see* Cyrenaica

Lithuania
 forest statistics, 1937 2 7
 forestry, 1918-38 2 182

Louisiana
 farm forestry 4 137
 forest
 resources, Delta 1 126
 types 1 246, 2 8, 3 33, 4 224
 logging costs 2 306-7
 management 4 224
 research 2 181
 statistics 4 213
 trees 5 170

MADAGASCAR
 air reconnaissance 1 55
 fossil trees 2 110
 protection, management and research 1 74

Madras
 dry fuel forests 2 208, 3 212, 4 100-1
 flora and geology, Kalahandi 4 219
 fodder trees 5 133-4
 forest types 1 13, 24 (2), 2 199, 4 157, 219
 silviculture 2 170, 3 299-300

Maine
 climatic injuries 5 274
 forest
 insects 2 91
 types 5 27

Malawi *see* Nyasaland

Malaya
 ambrosia beetles 3 170
 charcoal 2 315, 3 235
 enumerations 3 85
 flora 1 246, 249, 2 24, 336
 forest
 industries 1 114, 5 232
 policy 3 264
 research institute 1 73
 service 5 232
 types 2 336, 3 292
 weed control 2 325
 forestry and tin mining 1 306, 2 266
 phenology, Singapore 2 288
 producer gas 2 232-3
 rainfall records (Kepong) 3 19

GEOGRAPHICAL INDEX

Malaya—cont.

- rubber research 2 180
- sawmilling industry 2 280, 3 267–8
- silviculture 1 28, 30, 2 89, 3 86
- timber
 - building 2 235
 - production 1 211
 - properties 1 94, 280, 2 300, 302
 - seasoning 1 46–7, 183
 - softwood substitutes 2 218
 - uses 2 90, 300
- trees, wayside 1 164, 2 261, 336
- working plans 1 302

Malaysian region

- Cassia bark 5 131
- flora 1 150, 4 95, 96

Mali see French Sudan

Manchuria (Manchukuo)

- bark beetles 2 122
- forestry 2 108–9
- pulp and rayon industry 2 57
- pulpwoods 2 149–50, 226, 309, 3 60, 142, 4 39

Manitoba

- budworm 4 250
- ecology 5 18
- fire control 1 186, 2 265, 323
- forest
 - Act 4 139
 - types 1 125–6
- shelterbelts 2 216
- timber production 2 262

Martinique

- forest policy 3 352
- trees 3 307
- vegetation and crops 3 291
- see also Antilles

Maryland

- insect pests 4 192
- natural fire barriers 3 336
- palaeoecology 3 97, 4 11

Massachusetts

- erosion control 1 306
- forest(s)
 - succession 2 25, 125–6
 - town 2 254
 - types 2 125–6
- insect pests 1 191, 5 203

Mauritius

- forest types 3 33
- match industry 1 114
- plant morphology 1 244
- termite control 4 234

Mexico

- chicle production 5 10
- flora 1 149, 2 127, 5 18–9, 21, 169
- forest(s)
 - and forestry 4 83, 5 10
 - department 1 126
 - laws 1 304, 5 10
 - national convention 3 269
 - statistics 1 123, 5 76
 - types 5 158
- national parks 5 10
- plants for paper 5 55
- resin production 5 270
- roadside planting 5 33
- rubber production 5 1–4
- soils 5 99

Mexico—cont.

- timber(s)
 - descriptive list 1 168
 - preservation plants 4 176
 - resources 4 12
 - trade 1 168, 3 185, 4 68
 - weights, hardwood 4 12
- vegetation 2 125, 5 99, 158
- Michigan
 - farm forestry 2 339, 5 208, 290
 - fire control 2 242, 3 181
 - forest
 - history 5 170
 - resources 3 192
 - types 4 18, 95, 136, 157, 5 18, 170, 179
 - grading of logs 4 111
 - insect pests 4 131–2
 - land use 4 139, 5 213
 - palaeoecology 4 11, 212, 5 8–9
 - sand-dune fixation 3 288
 - wood industries, statistics 5 232
- Micronesia see Pacific islands

Minnesota

- Christmas tree industry 2 319
- forest
 - laws 1 304, 2 164
 - pest and disease surveys 4 194
 - policy 2 255
 - resources 4 12
 - statistics 4 12
 - succession 4 19–20
- insect pests 1 251, 3 82, 4 194
- logging costs 4 197–8
- palaeoecology 5 156
- shelterbelt species 1 269
- tree identification manual 5 170
- Mississippi
 - farm forestry 3 178 (2), 261, 4 64, 5 69
 - forest
 - statistics 4 213
 - taxes 1 199, 2 254 (2), 4 139
 - types 2 266, 3 31
 - hardwood
 - improvement fellings 2 299, 3 130–1
 - utilization 3 130–1
 - preservation tests 3 326, 4 42, 5 183

Missouri

- evergreens, ornamental 5 28
- forest statistics 3 357–8
- forest trees 2 198
- wood industries 5 157–8

Montana

- Christmas trees 3 154
- farm forestry 2 83
- fire control 4 124
- mining timbers 4 48
- railway sleepers 4 178
- sawn products 1 224, 2 184, 3 100
- shelterbelts 5 33
- slash-disposal law 1 313

Morocco

- afforestation 1 39
- ecology 5 10

Mozambique

- forest *Leguminosae* 4 21

Mysore

- forest types 1 83, 3 114
- forests, Ramdurg 5 9–10

NEBRASKA

- frost injury 3 156
- growth rings and precipitation 3 86, 5 287
- vegetation 4 157

Netherlands

- forest
 - education 4 83, 148
 - fires 2 70 (2)
 - history 1 226
 - inventory 1 316
 - laws 4 148
 - management 3 279, 4 83
 - pest control committee 2 327
 - research 4 83
 - statistics 3 279, 4 148
 - survey 1 316
- fuel prices 4 264
- nature conservation 4 148
- seed control 2 272, 274
- timber
 - grading 2 55
 - imports 3 279
 - prices 4 264
 - production 3 279
 - supply 4 148
- war and timber industry 3 192
- Netherlands East Indies see East Indies
- Netherlands New Guinea see New Guinea

Nevada

- aerial photography and land use 5 288–9
- forest and vegetation types 4 149
- palaeoecology 4 11
- wild rubber 5 132–3

New Brunswick

- farm forestry 5 68
- forest(s)
 - and forestry 1 14, 3 281
 - fire control 2 323, 3 184, 335–6, 4 187, 5 157

service manual 4 65

- statistics 1 14, 3 184, 5 157
- types 2 165
- insect pests 2 173, 248, 5 62
- porcupine damage 4 250
- pulp and paper industry 5 189
- soil types 2 165
- timber regulations 3 355

New Caledonia

- flora 2 27

New England

- bleeding canker disease 4 57, 191
- ecology 2 25, 207, 4 98, 220, 5 242
- forest(s)
 - fire control 3 243 (2)
 - policy 2 82, 164
 - service 3 354, 4 198
 - statistics 5 231
 - types 2 25, 207, 4 98, 220, 5 242
 - virgin 4 220
- growth rates, conifers 3 86
- salt spray damage 2 191

GEOGRAPHICAL INDEX

New England—*cont.*

- silviculture 1 232-3, 3 296, 4 98
- timber production 5 231
- wind damage 1 126, 5 273

New Guinea and adjacent islands (Papuaia)

- aerial survey 1 300
- flora 1 149, 151 (2), 2 126, 3 36, 37 (2), 115 (2), 4 20 (5), 4 21, 97, 97 (3), 223 (3), 5 107, 244
- forest types and vegetation 4 18
- termites 5 25
- timber exports 2 256
- timbers 3 48

New Hampshire

- charcoal making 4 118
- European Spruce sawfly 1 240, 5 141

farm forestry 2 255, 5 149

forest(s)

- experimental 3 175, 4 259
- fires 7 2
- laws 1 304
- town 1 199
- types 3 175, 4 220, 259
- marketing 1 185
- small mills 1 280

New Jersey

- Doyle log rule 5 205
- European Pine sawfly 2 195-6
- exotics 3 87
- forest(s)

- fuel types 5 170
- management 2 80-1, 85
- private 4 140, 259
- types 2 80-1, 85, 250
- insect pests, nursery 4 133
- palaeoecology 5 85
- phenology 3 208
- yield tables, hardwood 2 85

New Mexico

- dendrochronology 4 258
- forest types 3 175
- fungus diseases 4 56
- ornamentals 5 30
- private forests 3 267
- rainfall 1 228
- road transport costs 3 57-8
- timber sales 5 207

New South Wales

- charcoal 2 314, 3 149-50, 4 46
- ecology 3 34-5, 291-2
- forest

- fires 7 20
- statistics 2 88, 169
- types 1 149, 3 34-5, 291-2, 4 19
- forestry and timber resources 2 280

insect pests 4 131

mistletoe control 3 338

- producer gas 1 290, 2 153, 3 150
- see also* charcoal

timber(s)

- building 2 154, 235, 4 242 (2)
- fire resistance 3 139
- marine borer attack 4 36
- preservation 2 313
- uses 2 90, 4 243
- veneers 4 236
- weights 2 221

New York State

- blister rust control 4 248
- ecology 5 100
- erosion control 5 163
- exotics 1 37, 248, 2 73-4, 77, 4 161
- farm forestry 5 68, 207
- forest(s)
 - community 1 304
 - history 4 139
 - laws 1 304
 - types 2 126, 5 100, 102, 169 (2)
- fungi 1 294-5, 5 38, 103
- insects 1 294-5, 2 73-4, 3 256, 4 129
- land use 5 149
- licensing of foresters 1 122
- log-measurement units 3 172
- meteorological records 2 185
- ornamentals, hardness 4 99
- palaeoecology 1 73
- phenology 3 208-9, 299
- planting and reforestation 3 279, 303, 4 103-4, 5 31
- silviculture 4 225
- taxation 1 301
- timber trade 3 268

New Zealand

- aerial survey 1 55
- afforestation 2 9, 5 212, 214
- charcoal
 - for active carbon 3 235-6
 - producer gas 4 118
- dune reclamation 2 69
- erosion control 1 233
- exotics 1 33, 2 42, 264, 3 297, 4 166
- farm forestry 4 137
- flora 2 127, 3 294
- forest
 - fire control 2 266, 341, 3 336, 5 212
 - laws 2 81, 3 356
 - policy 5 212
 - rights 2 81
 - service 2 9
 - trees, hardness of 4 186
 - types 3 293

forestry 1 126

heartrots 3 338

insect pests 2 30, 73, 265

logging equipment 1 211

national parks 1 55

pollen morphology, conifers 3 30

root-grafting species 4 92

shelterbelts 4 137

soil survey 3 285

termites 3 295, 4 234

timber(s)

- exports 1 6-7
- grading rules 1 211
- industry 1 6-7, 3 186
- statistics 2 9
- uses 3 307, 316, 5 185, 214
- wartime sources of 4 200
- wood hydrolysis 3 69

Newfoundland

- marine fungi 5 38
- timber production 4 69

Nicaragua

- rubber production 5 1-4
- vegetation, Pacific coast 2 112

Niger *see* French Niger Colony

Nigeria

- afforestation 3 101
- climate 2 25, 3 176, 281
- cocoa and forestry 2 254, 3 332, 4 51
- ecology 1 82-3, 146, 2 25, 3 113, 114, 176, 182, 304, 4 18, 197
- erosion 3 106, 4 152
- farm forestry 4 64
- fauna preservation 1 199
- forest(s)
 - and tsetse 1 152
 - communal 2 266, 4 199
 - fuel 2 185, 3 352
 - laws 4 199
 - policy 3 101, 4 66, 198, 5 146, 293
 - reservation 2 253 (2)
 - succession 3 304
 - types 1 82-3, 146, 3 114, 4 18, 5 20

forestry and war 5 73

fuelwood 3 358, 5 51

land-use planning 3 182 (2), 4 199, 205-10, 5 292

minor forest products 1 211, 2 237, 238, 3 332, 333, 4 182, 184 (3)

plantations 3 299 (2), 4 24, 5 176, 251-2, 253

plywoods 2 307

producer gas 4 182

railway sleepers 1 211

rubber production 4 182, 183

sawmill, pilot 4 210, 5 73, 293

silviculture 2 203, 3 121

soils 2 254, 3 176, 4 51, 5 89

taungya 5 251-2

timber(s)

- durability 1 114, 211
- for floor blocks 1 211
- production 3 183
- softwood substitutes 3 131-2
- utilization research 2 140
- vegetation map, Sokoto 2 199
- wartime timber trade 4 201

North America

bark beetles 3 256, 4 22, 5 174

blister-rust control 4 247

ecology text-book 2 167

flora 4 18

forest

pathology 1 143, 2 194

types 4 11, 5 28

forestry bibliography 2 267

land use 4 136-7

palaeoecology 4 82, 5 8

rubber growing 5 133

sawmilling practice 4 175

timber

- borers 3 256
- production 3 132
- properties and uses 3 132 (2), 132-3, 307 (4), 4 230 (3), 230-1, 231, 5 43
- seasoning 3 132
- vegetation 4 93
- see also* Canada and U.S.A.

North Carolina

- Biltmore plantations 3 193

GEOGRAPHICAL INDEX

North Carolina—*cont.*

- forest
- industries **3 18**
- resources **2 8, 111, 278–9, 3 18, 192**
- statistics **2 8**
- types **2 25, 289, 3 30–1, 114, 4 157–8, 218, 5 20, 85–6, 242**
- grazing **4 182–3**
- succession **2 289, 3 30–1, 41, 4 157–8, 5 20**
- timber, treated **3 324**
- tree distribution maps **3 113**

North Dakota

- principle trees **4 94**
- shelterbelts **1 269**

North Temperate Zone

- forest(s)
- primeval **1 84**
- tree distribution **5 167–8**
- types **1 84, 2 289**
- wood structure **2 300**

Northern Rhodesia

- forest
- laws **2 174**
- service **2 174**
- silviculture **2 170–1**
- timbers **1 290, 2 125, 4 230**

North-West Frontier Province

- (India)
- forest
- conservation **3 193**
- types **1 124–5**

Norway

- afforestation **1 305, 5 31**
- cellulose
- fodder **3 359–60, 4 143, 146**
- production **4 175**
- census of woodlands **4 259, 5 151–4**
- charcoal industry **5 216**
- climate **5 159**
- dendrochronology **5 144**
- exotics **1 162–3**
- farm forestry **2 164, 5 288**
- felling operations **5 185**
- fibreboard production **4 212**
- forest(s)
- and forestry **4 143–6**
- economics **5 69**
- grazing **1 305, 2 81**
- laws **1 316, 2 81, 164, 4 144, 146, 5 153**
- policy **4 144–5, 5 68**
- private **1 107**
- rights **1 305, 2 81**
- statistics **4 143–4, 5 154**
- types **4 259, 5 158**

fungi **5 38, 218**

- palaeoecology **5 8**
- plant physiology **2 189**
- producer gas **3 270, 4 146**
- pulpwood prices **2 277–8**
- silviculture **1 198, 3 296 (2), 5 68, 208**
- seed control **1 255, 2 272**
- timber(s)
- for aircraft **1 282**
- production **1 211, 4 145–6**
- war and forestry **3 186, 267, 359, 4 146**

Nova Scotia

- co-operative marketing **1 185**
- forest laws **4 199, 261–2, 5 212**
- fungi **2 289**
- insect pests **5 62**
- porcupine damage **4 250**
- pulp and paper industry **5 189**

Nyasaland

- Bamboos **2 125**
- exotics **1 19, 2 171, 5 31**
- flora **2 125**
- forest laws **1 303**
- fuel production **2 173**
- land use **1 213**
- timber
- durability **4 169**
- production **2 173**

OHIO

- co-operative sawmilling **4 39**
- ecology **3 196**
- erosion control **2 283**
- farm forestry **2 283**
- forest
- fires **1 186**
- types **5 101–2**
- hydrology **4 215**
- log grade **3 350**
- palaeoecology **3 97, 4 11, 212**
- soils **5 88**
- volume tables **2 249, 3 172 (3), 349 (2)**

Oklahoma

- climate, soil, and tree growth **3 298**
- forest
- succession **4 19, 53, 218**
- trees **3 204**

Ontario

- aerial survey **4 259–60**
- conservation **3 176, 4 199, 5 212**
- farm forestry **2 255**
- forest
- fire control **2 157, 5 207**
- history **1 73, 5 207**
- laws **2 266, 5 207**
- management **1 106, 194, 5 207**
- types **3 122, 178, 4 95**
- hydrology **1 233**
- palaeoecology **3 97**
- regeneration **1 86–7, 160 (2)**
- tent caterpillar epidemics **2 195**
- tree planting guide **2 211**
- wood anatomy **3 133–4, 4 107**

Oregon

- afforestation **4 215, 5 89–90**
- climate **5 86**
- flora **4 94**
- forest(s)
- fire control **3 242, 336, 356, 4 246, 5 59**
- laws **3 120, 181 (2), 355–6, 356 (4), 4 139, 140, 5 71, 147, 212**
- management **3 351–2, 4 137, 5 207**
- private **3 177 (2), 352–3, 354–5, 5 59, 71, 145**
- statistics **2 111, 163, 184, 3 100 (2), 192, 192–3 280, 354–5**

Oregon—*cont.*

- forests(s)
- types **2 197–8, 3 115, 191–2, 242, 4 19, 5 20**
- forestry, Klamath Indian reservation **3 281**
- fungi **4 221**
- insect pests **1 177, 297**
- palaeoecology **3 191–2, 4 11, 82–3, 5 9 (2), 86, 156**
- reforestation **5 177**
- tanstuffs **4 49, 243**
- timber production **1 124, 3 280, 4 267**
- waste wood utilization **4 184, 5 55, 56**

Orissa

- Bamboos for paper **1 7**
- flora **4 94**
- forestry, Parlakimidi Division **4 148–9**

PACIFIC ISLANDS

- flora **3 294**
- new and noteworthy trees **1 249 (2), 3 36, 4 20**
- see also individual islands*

Pacific (Ocean) Region

- forest resources **4 11**

Palestine

- sand fixation **2 91**
- soil conservation **2 239**
- soil types and vegetation **5 162**

Panama

- flora **4 96, 5 19, 106**
- forest types **4 93, 5 19**
- rubber production **5 1–4**
- timber durability **3 232, 4 179**

Papua and Papuasias *see* New Guinea

Paraguay

- flora **3 115**
- forest laws **3 360**
- timber trade **3 185**

Pennsylvania

- Allegheny nature reserve **3 89**
- farm forestry **3 280**
- forest
- fires **5 239**
- laws **5 136**
- protection **5 136**
- taxation **4 139**
- types **3 34, 144, 5 102, 144, 145, 239, 241**

fruits and nuts **3 239**

- fungi **4 220–1**
- insect pests **5 141**
- labour **3 90, 5 291**
- management, hardwoods **5 248**
- pulpwood cutting costs **3 224–5**
- soils **5 102, 241**
- species trials **3 212, 4 104**
- stand tables **5 144, 145**
- wood utilization **2 225**

Persia *see* Iran

Peru

- flora **4 21**
- forest
- plants for food **5 130**
- policy **2 94**
- service **2 94**

GEOGRAPHICAL INDEX

Peru—cont.

- leaf-cutting ants **4** 255
- plant names **2** 180
- rubber production **5** 1-4
- timber(s)
 - descriptions **4** 106
 - mechanical properties **1** 273-4
 - trade **3** 185
- vegetation types **4** 93

Philippines

- Candlenut oil production **2** 237-8
- felling practices **1** 281
- flora **1** 151, 249, **2** 27, **3** 203, **4** 219
- forest
 - economics **3** 355
 - laws **1** 304, **5** 291
 - pests **3** 89 (2)
 - policy **3** 267
 - recreation **3** 89
 - resources **2** 111
- fruits, edible **2** 238
- fungi **3** 89, 246
- logging **3** 140
- resin tapping **1** 102
- sawmilling industry **2** 280
- tanstuffs **4** 121
- timbers **1** 43, 173, 271-2, **2** 259-60, **3** 135-6, 138-9, 230, **4** 35
- wild life **3** 89

Poland

- Bialowieza nature reserve **4** 141
- forest(s)
 - and forestry **2** 111 (2)
 - laws **4** 1-9
 - of Vistula and Warta regions **3** 280
 - private **4** 1-9
 - rights **4** 5-6
 - statistics **4** 1-9, 68, **5** 86
 - vegetation **1** 83
- insect pests **4** 2
- palaeoecology **1** 224
- producer gas **4** 68
- resin production **4** 50
- wartime exploitation by Germany **2** 94, **3** 280, **4** 68, 203, **5** 86
- working plans **4** 3-6

Portugal

- afforestation **5** 76
- aromatic plants **3** 68
- cork industry **3** 360
- cyclone damage **4** 186
- entomology **4** 224
- plant geography **3** 203, **5** 22
- pulpwood **5** 265
- war and forestry **3** 270, **4** 69, **5** 265

Puerto Rico

- Eucalyptus oil **5** 52
- forest entomology **3** 251, **5** 200
- forestry and erosion **2** 9
- montane vegetation **4** 19
- Palm straw industry **2** 155

Punjab

- afforestation **2** 137, 214, **3** 128
- charcoal burning **1** 49
- erosion **1** 19, 20, 133 (3), 292, **5** 13 (2), 210-11, 233, 292
- forest(s)
 - and war **4** 200
 - fire protection **2** 70
 - grazing control **1** 133 (2)

Punjab—cont.

- forests(s)
 - laws **3** 90
 - management **2** 112, 279, **5** 72
 - types **3** 306
- irrigated plantations **4** 152, **5** 30, 97
- sawmilling **5** 210-11
- silviculture **2** 299, **3** 90, 127, **5** 29, 111
- wood working industries **1** 49 (2)
- yield tables, Sissoo **4** 136

QUEBEC

- aerial survey **4** 259-60
- charcoal **2** 234, **5** 49
- conservation manual **5** 230
- diseases of trees **3** 74, **4** 247
- farm forestry **4** 263
- forest(s)
 - Experiment Station, Valdestier **2** 276
 - fire protection **2** 156, **3** 72
 - industries **3** 317
 - laws **3** 90, 265, **4** 65
 - management **3** 88, 179, **5** 207
 - Montmorency **5** 207
 - Outaouais valley **5** 10
 - ownership **2** 8
 - policy **1** 108, 303, **3** 178, **5** 70
 - statistics **2** 8, **3** 99, 179, **4** 12, 135, **5** 207
 - types **1** 26, **3** 178, 262, **5** 207

- insect pests **1** 152, **3** 81 (2), **4** 135, **5** 63, 64
- logging **1** 178, **2** 254-5, **3** 263
- pulpwood **2** 8, 267, 320
- sawmills **3** 59
- silviculture **3** 88, 130
- terminology **4** 10, **5** 229
- timbers **2** 267, **3** 48, 65 (2), **5** 256-7
- water transport **3** 227
- wild life management **4** 65
- wood-waste utilization **2** 67 (3)

Queensland

- communal forestry **3** 90
- diseases and pests of trees **2** 91-2
- ecology **4** 18
- essential oils **4** 50
- forest types **3** 32, **4** 219, **5** 18, 19-20
- producer gas **2** 234, 314, **3** 149, 328, **4** 46, **5** 50
- sawmill census **1** 7
- timber properties and uses **2** 44, 90

REUNION

- forests **1** 27

Rhode Island

- forest succession **2** 25
- timber durability **4** 179

Rhodesia see Southern Rhodesia, Northern Rhodesia

Rumania

- afforestation **1** 229, **2** 279
- barking technique **2** 236
- exotics **1** 255

Rumania—cont.

- forest(s)
 - Brosteni **1** 25
 - communal, Transylvania **2** 82
 - economic role **2** 8
 - exploitation **1** 73, **2** 340
 - laws **1** 56, 57, **3** 181, 355
 - policy **1** 56, 57, **2** 82, 334
 - statistics **2** 278, **4** 82
 - types **3** 100, 122, **4** 18
- forestry bibliography **5** 229
- nature protection laws **3** 89
- resin tapping **2** 237
- silviculture, Oak **1** 155
- timber
 - for pitprops **3** 52
 - industry **1** 226
- tree distribution **1** 246, **2** 24, **3** 113-4
- war and forestry **1** 200, **4** 203

SABAH see British N. Borneo

St. Bartholomew (West Indies)

- check list of spermatophytes **3** 32

St. Lucia (West Indies)

- forestry **1** 227

St. Vincent (West Indies)

- erosion **1** 79

Sakhalin

- Spruce bark beetles **3** 82

Salvador, San Salvador see El Salvador

Sarawak

- flora **1** 246 (2), 249, **2** 290
- forest law **3** 181
- sawmilling industry **2** 280
- timber durability **2** 265, **3** 137
- utilization **1** 211
- see also Borneo

Sardinia

- afforestation **1** 90
- shelterbelts **1** 167

Saskatchewan

- aerial site mapping **4** 259-60
- forest policy **5** 149
- shelterbelts **1** 167, **2** 117, 216
- sustained yield **3** 88
- Willows **5** 105

Scandinavia

- forest pathology **2** 86-7
- pulp and paper industries **4** 175

Scotland

- choice of species **3** 22, 34, 43
- exotics, frost damage **5** 58
- forest(s)
 - private, policy **4** 66 (2)
 - types **4** 18, 93
 - vegetation and soils of N.E. **3** 22, 34, 43
- see also Great Britain

Seychelles

- vegetation **2** 199

Siam

- charcoal kilns **2** 315, **5** 268
- flora **2** 201, **5** 22
- insect pests **4** 133
- pulpwoods **4** 40

Siberia

- forest types **1** 224, **4** 93
- fungi **2** 191 (2)

GEOGRAPHICAL INDEX

- Siberia—*cont.*
timber(s)
chemical composition 5 258–9
exports 4 82
- Sicily
reforestation 1 162
stumpwood utilization 2 240
- Sierra Leone
forest
policy 5 147
problems 3 100–1
types 2 88
timbers 4 106, 120
wartime production 4 200
- Sind
direct sowing 5 111, 162–3
riverain forests 4 83
- Singapore *see* Malaya
- Slovakia
forest(s)
and forest industries 2 94–5, 95,
3 186, 280
statistics 2 94–5
types 2 25
forestry bibliography 4 147
seed certification 2 94
- Somalia *see* British Somaliland,
Italian Somaliland
- South Africa
afforestation 2 35
Afrikaans tree names 2 276
exotics 1 23, 2 27, 3 27
fodder species 4 123
forest
exploitation 3 191
fire control 3 90, 265, 5 212
history 1 13
laws 3 90, 265 (2), 5 212
policy 5 74–5
service 1 13, 57
statistics 1 13, 2 88, 4 13, 5 74–5,
156–7, 157
forestry 2 279–80
insect pests 3 343, 5 285
key to Eucalypts 2 27
nomenclature of Podocarps 5 229
planting, commercial 4 165
producer gas charcoals 3 150–1
pulp and paper making 2 57, 90,
4 175
rodent damage and control 4 192
rubber production 5 53
shelterbelts 5 22
silviculture of native species 1 37,
4 197
softwood
policy and production 5 74–5
tending 1 165–6
streamflow studies 2 188, 3 281,
5 233
termites in buildings 4 234
timber(s)
borers 5 39, 285
durability 4 230
for mining 2 62, 235, 3 146, 311,
4 120, 5 156–7
market research 5 75
nomenclature 2 276
preservation 3 146
properties and uses 2 90, 4 48
seasoning 4 180
- South Africa—*cont.*
Wattle
bark, industry and grading 3
237 (2), 4 183
extract 5 192
silviculture 2 235
- South America
flora 1 150, 3 37, 4 97 (2), 5 244
timbers 1 40, 3 50–1
see also Latin America
- South Australia
Bushfire Act amendment 3 181
caseboard mill 1 7
fire fighting truck 2 71
forest employment 1 8
Pine plantations 5 109
soil erosion 1 5
tree nutrition 5 246
- South Carolina
erosion 1 233
farm forestry 3 261–2, 4 64, 263,
5 68
forest(s)
private 2 339
resources 1 224 (2)
succession 5 242
taxation 4 263
types 3 114
fuel and pulpwood 2 173
palaeoecology 2 181
tree distribution maps 3 113
- South Dakota
drought-resistant trees 3 204, 335
forest types 3 204
palaeoecology 5 9
- Southern Rhodesia
conservation of natural resources
1 125
exotics, natural regeneration 2 89
Eucalyptus snout beetle 2 286
farm forestry 3 215
forest statistics 2 112
producer gas 4 265
timber
industry 4 264
preservation 4 238
- Spain
afforestation 2 268, 341, 3 270,
360, 5 254
exotics 4 189, 196
forest
statistics 3 186
types 5 20
fungus diseases 4 189
pulpwood consumption 3 16
resin and turpentine industry 4
122, 203, 5 76, 270
yield tables, Pine 4 196
- Spanish Guinea
area exploited 3 279
timber exports 1930–39 3 279
- Sudan
charcoal production 1 290
native housing 1 290
- Sumatra
balsams from Pines 1 50
Dipterocarp forest 3 193
forest succession 1 19
insect attacks 1 105
lalang (*Imperata*) grass control 3
74
- Sumatra—*cont.*
Palm cultivation 3 333
pulpwood and resin production
3 303, 4 183
reforestation 3 303
timbers 4 231–2
see also East Indies
- Surinam (Dutch Guiana)
flora 3 294 (4), 295, 4 94
tanstuffs 5 130
useful plants 5 19
vegetation types 4 93
- Swaziland
native plant names 3 189
- Sweden
afforestation 1 91
cellulose utilization 2 150, 3 270,
4 141, 175, 212, 264, 266–7,
5 73–4, 214
chemical utilization research 1 45
co-operatives 3 178, 265–6
elk damage 5 200
farm forestry 5 207–8
felling season 1 177–8
fibreboard production 4 212
forest(s)
employment 5 216
fire statistics and control 5 275
fodders 5 194, 195
grazing 2 255, 3 182, 267, 4 263,
5 213 (2)
industries 4 261, 5 213
Institutes 5 84–5, 155
laws 1 124, 2 255, 272, 3 98, 4
199, 5 213
management 2 78, 5 287
ownership 2 78, 3 16–17
policy 1 303, 5 213, 291
private 2 80, 81, 3 182, 5 291
products research 4 81, 141, 5
155
Society 5 230
soils 4 85, 5 213
state 2 276, 5 291
statistics 1 52, 211, 305, 2 110,
278, 3 16–17, 118, 267, 4 141,
5 156 (3), 214, 287–8
types 3 316, 4 220, 263, 5 30,
84–5, 85, 156 (3), 179–80,
213 (2)
forestry boards 3 266–7, 5 207–8
fuelwood *see also* producer gas
below
mill 3 58
rotation 2 318
statistics 2 318, 335, 3 17, 98 (2),
118, 4 141, 263–4
insect pests 5 84–5, 200
labour problems 3 263, 4 261, 5
81–3, 210, 216
logging
accidents 3 179, 179–80
work study 5 81–3
oil, conifer needle 5 194
producer gas 1 101, 184, 289 (2),
2 154, 233–4, 314–5, 316, 316–7,
3 58, 98, 150, 207, 236, 270,
4 181–2, 202, 5 73–4, 127–8,
190, 191, 268
pulp and paper industry 2 277–8,
4 175, 212

GEOGRAPHICAL INDEX

Sweden—*cont.*

- resin tapping 5 270
- seed control 2 271–4
- silviculture 5 213, 249, 249–50, 287, 288
- timber(s)
 - exports 2 278, 4 69, 141
 - grading 2 241
 - house construction 3 156
 - insect pests 2 303
 - production 1 211
 - trading agreements 4 69, 141
 - utilization 1 45, 5 56–8, 185
- tools 2 241, 5 261, 273
- transport 1 85, 2 335, 3 19, 58, 141, 5 56–8
- tree breeding 1 138–9, 139, 233, 3 26–7, 5 15–16, 16, 92–6, 165–6, 235–7, 252
- unemployment relief 3 89–90
- vegetation 1 253–4
- war and forest industry 2 335, 3 98, 4 69, 263–4, 266–7, 5 73–4, 75, 76, 214 *see also* cellulose utilization, fuelwood, and producer gas
- wood
 - distillation 4 241
 - hydrolysis 3 151–2, 5 50

see also Lapland

Switzerland

- afforestation 1 91, 3 181
- fibreboard production 4 212
- forest(s)
 - area 2 7
 - clearance for agriculture 3 181, 182
 - composition 3 41–2
 - history 1 200, 2 276, 3 96, 4 81, 5 8, 287
 - in the Emmmental 5 232
 - laws 3 355, 5 291
 - management 1 200
 - ownership 3 41–2
 - reserve funds 2 80
 - selection 1 30–1, 3 41–2
 - statistics 2 7, 3 279, 4 11
 - types 3 292, 4 18, 218
- fuelwood 3 141, 355
- leaf-cast disease 1 69–71
- palaeoecology 3 15
- producer gas 3 328, 4 44 (2), 47 (2), 119 (2), 181 (7), 241, 5 268
- seed control 1 256, 2 274, 4 217
- timber
 - properties 5 35
 - utilization 1 93, 3 142
 - war syndicate 4 201
- Willows 3 295

Syria

- Willow species 2 27
- ## Syrian Desert
- geobotanical analysis 5 100

TAIWAN *see* Formosa

Tanganyika

- ecology 1 24, 3 32–3
- erosion control 4 88
- flora 2 198, 3 14, 32
- forest types 1 24, 64, 3 32–3

Tanganyika—*cont.*

- geology 1 131
- labour efficiency 1 33
- paper-making species 1 283
- Swahili plant names 3 14
- timber properties and uses 1 94, 2 90
- tsetse reclamation 1 33, 64
- see also* British E. Africa
- Tanzania *see* Tanganyika and Zanzibar
- Tasmania
 - charcoals 4 46, 5 50
 - exotics 3 297
 - forest
 - fire wardens 2 93
 - history 1 227
 - forestry and timber industry 3 269, 281
 - land use 3 194
 - shelterbelts 2 139
 - soil map 3 194
 - timber insect pests 4 116
 - vegetation 2 200, 3 194

Tennessee

- erosion 1 133, 3 197–8
- forest
 - statistics 2 279 (2)
 - types 3 30–1, 117, 4 213

Tennessee Valley Authority

- erosion-control surveys 3 197–8
- forest
 - area 5 87 (3)
 - resources 2 183
- forestry 1 81
- fungi 3 341
- land-use survey 5 233
- plantations 5 247–8
- policy 5 67–8

Texas

- ecology 5 108
- exotics 2 162
- flora 5 169
- forest
 - resources 1 73, 3 192
 - statistics 4 213
 - types 4 19
- logging costs 2 306–7
- silviculture 2 162, 5 255
- wild life 5 244

Thailand *see* Siam

Timor

- timbers 2 112, 3 308–9, 5 113
- vegetation 2 112
- see also* East Indies

Togo

- forest types 1 125
- forests 1 14

Travancore

- insect pests 5 285

Trinidad and Tobago

- erosion 1 232, 3 105, 4 88
- forest
 - policy 1 213, 4 198
 - statistics 2 262
 - types 3 19, 4 19, 162, 5 18, 240–1
- forestry 1 227
- fungi 3 115
- land-use planning 2 165, 3 266 (2)
- ornamental and useful plants 3 203

Trinidad and Tobago—*cont.*

- silviculture 2 84, 3 211
- soil classification 2 115
- timber(s)
 - durability 2 92, 3 137, 138, 4 115–6
 - preservation 4 115–6
 - vegetation maps 1 213

Tripolitania

- forestry problems 1 73
- irrigated plantations 2 138
- see also* Cyrenaica

Tropical Africa

- forest(s)
 - and erosion 3 22, 5 72
 - grasslands 1 148
 - types 4 94–5
- pulp species 1 46, 3 59–60
- rubber, wild 5 132, 133, 195 (2)
- timbers 2 305, 5 180

Tropical America

- bark beetles 5 108 (3)
- chicle development 5 133
- forest
 - policy 5 70
 - types 4 157
- rubber production 4 51, 5 53

Tropics

- erosion 2 283, 5 72
- land use planning 2 165
- timber(s)
 - chemical utilization 3 318
 - preservation in wooden buildings 2 61, 321
 - properties 1 41
 - softwood substitutes 3 131–2

Tunisia

- producer gas 1 73, 3 360

Turkey

- forest
 - laws 1 57
 - management 3 176
 - protection 4 13
 - regions 4 83
- forestry
 - and utilization 4 13
 - bibliography 3 95
 - condition of 4 65
- insect pests 2 30, 4 129, 130–1, 5 284–5
- plantations 1 33
- timber and wood industries 5 231
- turpentine production 5 132

UGANDA

- Budongo forest 2 279
- forest
 - policy 2 279
 - types 2 279, 3 291, 5 239
- forestry, elementary manual 5 7
- indigenous trees 2 258
- rubber production 5 132
- shade trees 2 42
- stump planting 2 40
- swamp planting 5 178
- timber
 - durability 4 109
 - properties 1 84

GEOGRAPHICAL INDEX

Uganda—cont.

- vegetation
- Sese Islands 3 291
- Karamoja 5 239

see also British E. Africa

Ukraine

- direct sowing 2 38
- Dutch Elm disease 1 142
- exotics 2 208, 3 94, 4 195
- forest(s)
 - laws 4 66
 - policy 4 66
 - statistics 4 66
 - types 2 198, 3 29, 93
- shelterbelts 1 8–11, 2 131
- species trials 4 98
- timber economy 2 268
- water protection zone 4 66

United Provinces (India)

- cableway 2 321
- flora 3 203, 295
- forest
 - administration history 4 198
 - development division 2 255
 - industries 1 7
 - pulp and paper grasses 1 7
- plantation techniques 1 31, 31–2, 33
- Tenancy Act 3 90

Uruguay

- afforestation 4 88, 5 76
- forest
 - area 3 186
 - resources 4 84
 - types 4 93
- plantations 2 268
- timber trade 3 185

U.S.A.

- afforestation 1 91, 2 283, 5 89–90, 111, 179
- bibliographies 1 168, 282, 3 95, 278, 4 81
- charcoal 4 213
- climate
 - Great Basin 1 15
 - Prairie states 4 186
- conservation 1 307–8, 2 108, 180, 4 136, 137 (3), 139, 262, 5 71, 212
- controlled burning 4 54
- co-operatives see farm forestry
- cork substitutes 3 237
- dendrochronology 3 350, 4 258, 5 144
- diseases of trees 1 189, 295, 3 84, 339, 4 127, 168, 188, 190, 5 137, 138, 140, 218, 276, 278
- ecology text book 2 167
- erosion control 1 133, 292, 306, 2 69, 167, 3 22, 4 88, 153–4, 5 163
- farm forestry 1 72, 109, 200, 304, 308–9, 2 92, 164, 165, 265, 331–2, 332, 3 88, 177, 178 (6), 353, 357, 4 64, 137, 261, 262, 263 (5), 5 146, 149, 157, 214, 230
- farm forestry legislation 1 306 (2), 2 82 (3), 83, 166, 332
- flora(s) 2 124, 198, 4 21 (2), 159, 5 100
- fodder trees 5 292

U.S.A.—cont.

- forest
 - areas 1 316, 2 169
 - economics 1 302, 2 253, 333, 3 278, 5 73, 209–10
 - education 2 276
 - fauna 2 128, 247, 5 160–1
 - finance 2 334, 5 209–10
 - fire
 - control 1 186, 293, 2 71, 156, 180, 242, 324, 334, 3 73, 242, 336, 338, 4 124, 187, 5 197, 198
 - damage 2 244, 5 32
 - insurance 1 187–8
 - grazing 3 22, 176, 5 293
 - history 4 262 (2), 5 10
 - influences 2 169 (2), 5 274
 - inventory 1 73 (2), 224, 227, 3 178, 4 138
 - laws 1 109, 304, 306, 2 183, 4 65, 199 5 212, 276
 - management 1 122, 2 112, 251, 332, 3 179, 264 (2), 4 54, 137 (3), 259, 5 54, 73, 145
 - mensuration handbook 5 205
 - ownership 1 199, 304, 304–5, 2 254, 334, 3 90, 264 (2), 4 65, 5 71, 148
 - pathology 1 143, 4 249–50
 - policy 1 108 (2), 109, 199, 2 183, 253, 334, 3 91, 180, 252, 356, 4 65, 66, 137, 139, 199, 263, 5 7–8, 147–8, 232, 290
 - products
 - marketing 2 240 (2), 4 201
 - research 2 276
 - statistics 1 123, 3 99
 - recreation 4 199, 5 291
 - research 1 122, 122–3, 2 112, 3 190–1, 4 211–2, 212
 - service 1 304
 - statistics 1 224, 225, 227, 316, 2 111, 163, 183, 183–4, 184, 3 99, 100 (2), 179, 192, 4 137 (2), 212–3, 213, 5 149, 157 (2)
 - taxation 2 254, 3 356, 4 137, 139, 199, 5 72, 148
 - transport systems 4 111
 - trees 3 203
 - types 1 84, 147, 2 125, 197, 3 97, 100, 104–5, 115, 121, 204, 299, 355, 4 150, 167, 199, 212, 218, 219, 5 10, 28, 99–100, 102
 - valuation 1 197, 5 289
- foresters, licensing of 1 122
- forestry
 - and agriculture 2 165–6, 5 213, 293
 - general 2 84, 3 180 (2)
 - Prairie 2 253–4
 - private 1 109, 110, 194, 304, 2 82, 83, 183, 3 91 (5), 177, 180, 264 (2), 267, 357 (4), 4 64 (2), 137, 140 (2), 5 212, 290
 - publications 4 81
 - fungi 4 220
 - game laws 1 109, 304
 - hurricane damage 2 262

U.S.A.—cont.

- hydrology 1 19–20, 79
- insect pests 3 74, 171, 257, 4 224, 5 66, 117, 140, 141, 202, 203
- labour relations 4 261
- land classification 4 196, 260
- logging 3 140, 226, 316, 4 172–3, 5 290
- national parks 5 147, 149–50
- nature reserves 3 264–5
- nurseries, commercial 1 162
- nursery practice, Prairie 3 214–5
- palaeobotany 3 97, 4 11, 5 229, 231
- palaeoecology 4 82, 5 8, 231
- piñon nut industry 5 54
- plywood
 - grading 3 153, 5 120
 - industry 3 317, 4 212–3
- pulp and paper industry 2 8, 332, 3 59, 82, 229–30, 280, 319 (2), 4 39, 213 (2), 261, 5 44
- pulpwood 2 308, 3 320, 357, 4 69, 213, 244, 257, 5 69, 122–3, 123, 176
- railway sleepers 3 324 (4), 4 178, 5 267
- resin tapping 1 211, 2 265, 4 82–3, 244
- seed control 2 271, 274
 - policy 1 255, 2 274
- shade trees 5 292
- shelterbelts 3 131, 217, 4 105, 5 255–6
- silviculture 1 32, 92, 205, 265, 269, 2 139, 206, 208, 3 121, 131, 4 105, 225, 259, 5 26, 31, 32, 112, 176, 255–6
- Society of American Foresters 2 276, 5 230
- soil(s)
 - conservation 1 292, 2 167, 4 200, 5 89
 - of the U.S.A. 1 229
- management text-book 3 102
- movement indicators 3 194–5
- types 1 75, 3 104–5, 287, 4 150
- tanstuffs 5 129 (2), 192–3, 193
- timber(s)
 - aircraft 4 237, 5 115, 117, 118, 214
 - box-making 1 184, 4 48
 - consumption 1 184, 2 83, 110, 3 18, 280, 4 212–3, 213 (2)
 - cruising 3 353, 4 195
 - dimension products 2 64
 - durability 3 222 (3)
 - for boats 2 318
 - grading 1 291, 2 8, 156, 240 (3), 241, 302, 3 153, 224, 237, 315–6, 4 49, 182 (3), 5 40, 185, 191, 192
 - imports 2 43–4, 4 106, 148
 - industry 1 184, 282, 2 334, 3 18, 92, 192, 280 (3), 4 12
 - market 1 199, 4 201
 - preservation 2 60, 3 322, 324 (2), 325 (4), 4 176, 5 117, 189–90, 266, 267
 - production 2 8, 183, 3 92, 100, 4 213, 5 216

GEOGRAPHICAL INDEX

U.S.A.—*cont.*

timber(s)
 properties and uses 1 168, 270
 (2), 2 44, 56, 217, 3 49, 51,
 132, 307, 308, 309, 4 32 (2),
 105 (4), 107, 230, 231, 232–3,
 5 180 *see also* America and
 North America
 sales 2 251, 5 207
 staining fungi 1 277
 trade 1 207, 282
 trees 2 198, 3 95, 5 229 (2), 254
 trials of species 1 37, 248, 269,
 2 73–4, 77, 162, 3 87, 153–4,
 156, 212, 4 104, 161, 221, 243,
 5 23, 24, 51, 109, 112, 203
 Tung oil industry 2 66, 5 52, 281
 turpentine and rosin industry 4
 82–3, 122, 213
 utilization problems 2 217, 4 185,
 5 272
 vegetation 4 136–7, 5 99–100, 100,
 239–40, 241
 veneer and plywood industry 4
 212–3
 volume tables 1 298, 5 205
 war and forestry 3 89, 92, 270–1,
 280, 357, 4 69, 141–2, 203, 264,
 5 69, 75, 84, 86–7, 149–50, 214
 (3), 216
 Wattle products, imports 5 192
 wild life
 laws 1 109, 304, 3 89
 management 4 65
 wood cellulose 4 233
 wood distillation 2 149, 4 213
 yield tables 2 149, 4 213
*see also individual states and New
 England*
 U.S.S.R.
 aerial surveys 1 106, 5 216
 afforestation 3 351 (2)
 cellulose yields of conifers 3 221
 direct sowing 2 38
 Dutch Elm disease 1 142
 erosion control 2 188, 268, 3 94,
 351 (2)
 exotics 1 151, 254, 299, 2 208, 268,
 3 351 (2), 4 195
 forest(s)
 and climate 4 66
 and forest products 3 93–4, 4 13
 fires 2 110
 laws 4 66
 machinery 1 96
 management 1 219–22, 2 164
 of Kamchatka 1 125
 policy 2 164, 3 93–4
 protection 3 351
 soils 1 219–22
 statistics 1 224, 225, 2 110, 164,
 3 93–4, 4 66, 82, 5 231
 types 1 148, 2 198–9, 3 21, 292,
 5 231
 gutta percha 1 184 (2)
 hydrology and soils 3 19
 insect pests 4 192, 255
 producer gas 4 44–5, 203
 seed years, Spruce 4 226
 shelterbelts 1 8–11, 2 43, 3 47,
 93–4, 217, 351 (2)

U.S.S.R.—*cont.*

silviculture 3 351 (2)
 timber(s)
 chemical composition 5 258–9
 exports 1 13, 4 82
 production 1 13
 valuable 3 93
 tree
 breeding 3 351
 injury diagnosis 4 192
 propagation in deserts 1 164
 root systems 3 112
 vegetation
 of Suputinka river 5 22
 types 2 13, 5 231
 war and forestry 5 130, 216
 water conservation 1 232, 4 66, 215
see also Estonia, Latvia, Lithuania,
 Sakhalin, Siberia, and Ukraine
 Utah
 big game and land use 5 292
 ecology
 agricultural 3 177
 grazing 2 197, 3 177
 fire protection 4 54
 forest types 3 291
 native trees 4 219
 termite problem 3 256

VENEZUELA

flora 3 32, 281, 4 223
 forest(s)
 and forest products 4 13
 conservation 3 357
 grazing 5 293
 resources 4 84, 5 9
 types 3 281
 land-use surveys 2 269
 rubber production 5 1–4
 timber(s)
 native and scientific names 1 271
 properties and uses 1 73, 271

Vermont

reforestation 3 215–6
 Victoria
 bush fires 1 187, 188, 3 90 (2), 5 41
 charcoal production 4 181
 forest

fires *see* bush fires
 inventory 2 252
 laws 3 90 (3)
 forestry 2 9
 soil survey 1 77
 timber(s)
 decay fungi 4 188
 for packing cases 3 152, 5 41
 wartime substitutes 5 41

Vietnam *see* Indo-China

Virgin Islands (West Indies)

soil conservation 5 163

Virginia

bark moss ecology 3 34
 flora 5 19
 forest(s)
 of Cumberland mountains 4 213
 policy 5 87
 resources 5 87
 statistics 5 157 (4), 231
 types 4 199, 213, 5 101, 241, 242

Virginia—*cont.*

palaeobotany 4 11
 timbers, properties and uses 5 75
see also West Virginia.

WALES

afforestation 4 112
 glaze damage 4 53–4
 pollen analysis 3 96–7
see also Great Britain

Washington

co-operative marketing 2 331–2,
 4 262
 farm forestry 2 331–2, 4 138
 forest(s)
 fire control 3 242, 4 125, 246,
 5 32
 laws 3 355, 5 71
 policy 4 264 (2), 5 68, 145
 private 3 177 (3), 352–3, 5 145
 protection 2 334
 resources 2 111
 restocking 3 301
 State Board 4 264 (2)
 statistics 2 111 (2), 163, 184, 3
 100 (2), 280
 taxation 2 334, 3 181, 4 139
 types 3 115, 4 11, 151
 wastes, use of 5 135
 insect pests 1 177, 229, 4 160
 palaeoecology 1 224, 2 182, 3 15,
 97–8, 4 11, 5 9, 231
 succession 2 197–8

timber

industry 4 264
 production 1 124, 3 280
 windthrow 3 240–1, 5 116

West Africa

climate and vegetation 1 108,
 127–8
 erosion 1 127–8
 forestry and tsetse control 1 63–8
 land use planning 4 205–10
 phytogeographical map, Niger
 basin 1 147
 pulpwood 5 123
 shifting cultivation 1 127–8

timber(s)

conversion and transport 5 257
 properties and uses 5 257 (2)
 substitute species 2 44, 5 257
 utilization 1 177

West Bengal

Bamboo fungi 5 62
 deforestation and erosion 1 305,
 2 115
 flood control 1 305, 2 69
 submerged forest, Calcutta 3 191

West Indies

flora 5 23
 tanstuffs 5 269
see also Antilles and individual
 islands

West Virginia

flora 4 159
 forest
 climaxes 5 101
 management 4 196–7, 262
 products marketing 4 262
 insect galls 4 59

GEOGRAPHICAL INDEX

Western Australia
erosion 3 288
essential oils 5 271
exotics 1 22, 29, 132, 3 27, 5 246-7
forest
fire control 1 187, 3 73
types 3 194
fuelwood for mines 3 194
Pine disease 1 22
producer gas 2 64, 154, 3 235
sawmill improvement 5 293
timber
for gold-mines 3 194
for plywood 5 264
production 1 315
Wetar Island *see* Timor
Wisconsin
afforestation 3 129, 4 104
forest
fires 3 33, 114, 355
statistics, Burnett county 5 157
succession 2 289, 3 33, 114, 205,
4 95, 5 103
types 3 31, 33, 114, 5 18, 103,
231
land use 2 255, 4 95, 5 145

Wisconsin—*cont.*
nursery fertilization 2 172
palaeoecology 2 109, 5 8, 9, 86 (2),
231
plantation survey 4 227
soils 2 14, 293, 4 87
tree(s)
for cities 5 251
pests and diseases 3 258
resistance to snowbreak 1 240
World
abbreviations of journal titles 1 59,
115-6, 214-6, 317-9
climatic cycles and climaxes 5 99
erosion survey 1 111
essential oils 5 132
floras, guide to 5 18
forest(s)
distribution 2 7
education and research 1 72
industries and war 3 91, 358,
4 11
laws (1939) 2 164
products and tariffs 4 201
International Forestry Centre 1
122

World—*cont.*
kapok industry 2 66, 5 134
pulpwood resources and trade 1
225-6, 4 175
rubber-producing plants 5 53, 272
soil classification 1 128
tallest tree species 3 120
termites, international test 4 177
timber supply sources and trade
1 13, 200, 4 82, 148-9
toughest timber 1 275
turpentine and rosin industry 4
82-3
war and forest products 1 13, 3 91,
358, 4 11, 82
Wyoming
forest succession 3 33-4, 5 28
YUKON
forest succession 1 247
ZAMBIA *see* Northern Rhodesia
Zanzibar and Pemba
Swahili plant names 3 14
see also British E. Africa